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Office - Supreme Court, U. S.

FILED

NOV 12 1941

CHARLES EDWARD GADLEY
CLERK

Supreme Court of the United States

October Term 1941

No. 323

MUNCIE GEAR WORKS, INC. and BRUNS &
COLLINS, INC.,

Petitioners,

vs.

OUTBOARD, MARINE & MANUFACTURING
COMPANY and JOHNSON BROTHERS
ENGINEERING CORPORATION,

Respondents.

APPENDIX TO PETITIONERS' BRIEF.

(Constituting a reproduction of Defendants' Exhibit I, the
file history in the Patent Office of the application for the
Johnson patent in suit.)

SAMUEL E. DARBY, JR.,
Counsel for Petitioners.

CHARLES W. RUMMLER,
FLOYD H. CREWS,
Of Counsel.

DISTRICT COURT OF THE UNITED STATES

NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

**JOHNSON BROS. ENGR. CORP. *et al.*,
Plaintiffs,**

vs.

**MUNCIE GEAR WORKS INC.; *et al.*,
Defendants.**

**Civil Action 273
274**

Defendants' Exhibit "I".

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE

To all persons to whom these presents shall come, Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records
of this office of the File Wrapper and Contents, in the
matter of the

Letters Patent of

Harry L. Johnson, assignor to
Johnson Brothers Engineering Corporation,

Number 1,716,962,

Granted June 11, 1929,

FILED

for

AUG 16 1940

Improvement in Water Propulsion Devices. **HOYT KING**
CLERK

IN TESTIMONY WHEREOF I have hereunto set my
hand and caused the seal of the Patent Office to be
affixed at the City of Washington, this twelfth
day of December, in the year of our Lord one
thousand nine hundred and thirty-nine and of the
Independence of the United States of America the
one hundred and sixty-fourth.

ATTEST:

J. E. Johnson
Chief of Division

Commy P. Cox
Commissioner of Patents

NUMBER (Series of 1900)

PATENT NO. 1716962

1926

DATED JUN 11 1926

EXR'S BOOK 10-120

DIV. 21

HARRY L. JOHNSON

Johnson Bros. Engineering Corporation of South Bend Ind. Corp of Indiana.

SOUTH BEND

State of

INDIANA

Invention

Water Propulsion Devices

OUTBOARD MOTORS

ORIGINAL

APPLICATION FILED COMPLETE AUG 25, 1926

Petition, Specification,

Oath, First - \$50,

1 sheets Drawings,

FIRST FEE \$20

AUG 20, 1926

AUG 25, 1926

Examined and passed for Issue May 19, 1927

Johnson Ex. Dto. 22

Notice of Allowance MAY 15 1927

By Commissioner MAY 15, 1927

GEORGE J. JOHNSON 711 J.L.S. BLDG. CHICAGO, ILL.

Cor y Moore 1135 W. Madison St. Chicago, Ill.

Attorney Philip A. H. Smith

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

Chicago, Ill.

PETITION

To the Commissioner of Patents

Washington, D.C.

90-1000
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CHECK OFF

UNITED STATES PATENT OFFICE.

4110

INVENTOR:

H. L. Johnson

INVENTOR:

ATTORNEY:

G. J. Oltsch

131 1

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PETITION

ny

To the Commissioner of Patents:

9123

your petitioner Harry L. Johnson

of the United States

residing at South Bend

in the County of St. Joseph and State of Indiana

and whose post-office address is 908 East Sample Street, South Bend, Indiana

pray a that Letters Patent may be granted to him for the improvement

Outboard Motors

Propulsion Devices

set forth in the annexed Specification.

And I hereby appoint GEORGE J. OLTSCH, 711-12 J. M. S. Building, South Bend, Indiana
U. S. A., Register No. 9371, Attorney, with full power of substitution and revocation, to prosecute this
application, to make alterations and amendments therein, to sign my name to the
drawings, to receive the Letters Patent, and to transact all business in the United States Patent Office
connected therewith.

Signed at South Bend

County of St. Joseph

Indiana

this 10th day of August

(Sign here First name in Full.)

Harry L. Johnson

SPECIFICATION.

To All Whom it May Concern:

BE IT KNOWN, That I, Harry L. Johnson, a

citizen of the United States

residing at South Bend

in the County of St. Joseph and State of Indiana

have invented certain new and useful improvements in Water Propulsion

Devices

Outboard Motors

of which the following is a specification

JERRY L. JOHNSON

9496

OUTBOARD MOTOR

P

H

Invent
(21)

1 The invention relates to ³~~outboard motors~~
 2 particularly of the pivotally mounted type wherein the
 3 motor as a whole is pivotally moved during the steer-
 4 ing operation, and has for its object to provide the
 5 lower end of the motor rearwardly of the propeller
 6 with a water resisting plate against which the water
 7 is forced by the propeller, and which plate counteracts
 8 the side movement of the motor as well as the pivotal
 9 movement thereof in its bearing, thereby allowing the
 10 operator to steer a straight course while holding the
 11 tiller and without the strain on the hand, incident to
 12 the side throw referred to.

13 A further object is to provide a deflecting
 14 plate rearwardly of the propeller, said deflecting plate
 15 curving rearwardly and outwardly in the direction of
 16 rotation of the propeller, and against which plate
 17 water projected rearwardly by the propeller engages
 18 and counteracts the pivotal movement of the motor,
 19 thereby relieving the strain on the operator's hand

1 while gripping the tiller during a steering operation.

2 A further object is to provide the lower
3 end of the drive shaft casing with a casting which sup-
4 ports the propeller and propeller shaft and said casting
5 with a member arching the upper side of the propeller
6 and having intake and discharge ports leading to the en-
7 gine jacket, and a water resisting deflecting plate carried
8 by said casting rearwardly of the propeller blade, and
9 by the rear portion of the portion of the casting which
10 arches the propeller. Also to provide the casting
11 adjacent the upper side of the propeller with an anti-
12 cavitation plate, and which plate is preferably formed
13 integral with the casting, and additionally braces the
14 portion of the casting arching the upper side of the
15 propeller. 22 2

16 With the above and other objects in view the
17 invention resides in the combination and arrangement of
18 parts as hereinafter set forth, shown in the drawings,
19 described and claimed, it being understood that changes
20 in the precise embodiment of the invention may be made
21 within the scope of what is claimed without departing
22 from the spirit of the invention.

23 In the drawing: ¹
24 _{mm}

25 Figure 1 is a side elevation of an outboard
26 motor showing the devices applied thereto.

27 Figure 2 is a detail view in elevation of the
28 right side of the deflecting plate and portions of the
29 adjacent mechanism.

30 Figure 3 is a bottom plan view of a portion of
the anti-cavitation plate and the water resisting plate.



Referring to the drawing the numeral 1 designates the motor, which motor is provided with a downwardly extending drive shaft casing 2, which drive shaft casing is rotatably mounted in a bearing member 3 and 4 in the usual manner, and the motor as a whole is pivotally connected at 5 to the bracket 6, and which bracket in turn is securely clamped to the rear end 7 of a boat 8. In motors of this general type, the motor as a whole is pivotally moved in the bearing members 3 and 4 during a steering operation, and at which time the operator grasps the tiller 9. It has been found that during a steering operation it is necessary for the operator to maintain a firm grip on the tiller 9, and the hand and arm of the operator is under strain, particularly in long runs, and which strain is caused by the tendency of pivotal movement of the motor as a whole in the direction of throw of the propeller 10, and which throw not only has a tendency to cause the motor as a whole to have a pivotal movement, but also the rear end of the boat to have a lateral movement in the direction of throw of the propeller.

Propeller 10 is driven in the usual manner and in the present case the blades 11 thereof pass between the intake port 12 and the discharge port 13. During the rotation of the propeller, water is driven through the port 12 through the pipe 14 to the water jacket 15 of the engine, and is sucked as well as discharged through the port 13 by the propeller blades as they pass through the arched portion 16 of the casing 17. The arched portion of the casing 17 arches the upper side of the propeller and terminates rearward-

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—

1 ly thereof in the portion 18. Extending rearwardly
2 and outwardly from the portion 18 is a deflecting
3 plate 19, and against which deflecting plate water
4 forced rearwardly by the blades 11 of the propeller en-
5 gages and counteracts the pivotal movement of the motor
6 as a whole as well as the side throw, thereby relieving
7 strain on the hand of the operator while grasping the
8 tiller 9 during a steering operation. It will be
9 noted that the deflecting plate 19 curves in the direc-
10 tion of the direction of rotation of the propeller,
11 which causes the side throw and pivotal action, conse-
12 quently the current of water which is projected rear-
13 wardly by the propeller blade will impart sufficient power
14 on the curved plate 19 to counteract the pivotal tendency
15 as well as the side throw. It will be noted that plate
16 19 curves to the right, however it is to be understood
17 with a left hand propeller the plate may be reversed in
18 its position.

19 Port 12 extends upwardly through the arched
20 portion 16 of the casing 17 and formed integral with
21 said arched portion 16 and casing 17, and located adja-
22 cent the upper side of the propeller is an anti-cavita-
23 tion plate, which plate prevents cavitation and at the
24 same time forms a brace for the arched portion 16 of the
25 casing and eliminates the necessity of making the arch
26 16 relatively heavy, which in turn would cause a bulky
27 structure and unnecessary resistance as the motor moves
28 through the water.

29 ~~From the above it will be seen that means is~~
30 provided in connection with an outboard motor whereby
31 the pivotal action of the motor as well as the side
32 throw incident to the rotation of the propeller is ob-
33 viated, consequently strain on the helmsman is relieved.

9410

- 1 It will also be seen that the deflecting plate 19
- 2 may be formed integral with the casing 17, as well
- 3 as the anti cavitation plate, consequently can be made
- 4 in a single casting, thereby reducing the cost of manu-
- 5 facturing to a minimum.

3. The combination with the lower end of an outboard motor, a propeller carried by said lower end, of a member arching said propeller and terminating rearwardly thereof, a deflecting plate carried by said member rearwardly of the propeller, said deflecting plate extending laterally in the direction of turn of the propeller.

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4. The combination with a pivotal mounted outboard motor having a propeller, of a water deflecting plate disposed adjacent said propeller and forming means whereby pivotal movement of the propeller is obviated Q4

5. The combination with an outboard motor pivotally mounted and having a propeller, of means disposed rearwardly of the propeller and forming water resisting means whereby pivotal action of the motor Q is prevented as the motor moves through the water. as

6. The combination with an outboard motor having a propeller shaft casing, a propeller, a member arching one side of the propeller, of an anti-cavitation plate carried by the casing and the member arching the propeller and located above the propeller.

7. The combination with an outboard motor having a propeller shaft casing, a propeller, a member arching one side of the propeller, a water resisting member carried by said arching member and extending in the direction of rotation of the propeller, of an anti cavitation plate carried by the casing and the arching member. ✓

8. The combination with an outboard motor casing, a propeller, a member carried by the casing and arching the propeller and having intake and discharge ports, a water resisting member carried by the arching member and an anti-cavitation plate carried by the casing at opposite sides thereof and by the member arching the propeller. Q6

D⁴ 4-14

In Testimony Whereof

Harry L. Johnson
 Harry L. Johnson

OATH

State of Indiana,

County of St. Joseph,

ss:

Harry L. Johnson,

the above-named petitioner, being duly sworn, deposes and says that he is a
 citizen of (1) the United States,
 and resident of South Bend, Indiana;

that he verily believes himself to be the original, first, and (2) sole
 inventor of the improvements in

Outboard Motors

described and claimed in the annexed specification; that he does not know and does
 not believe that the same was ever known or used before his invention or discovery
 thereof, or patented or described in any printed publication in any country before his
 invention or discovery thereof, or more than two years prior to this application, or in public
 use or on sale in the United States for more than two years prior to this application; that
 said invention has not been patented in any country foreign to the United States on an
 application filed by him or his legal representatives or assigns more than
 twelve months prior to this application; and that no application for patent on said improvement
 has been filed by him or his representatives or assigns in any country foreign
 to the United States, except in the United States.

(Here name of Petitioner)
 Harry L. Johnson

Sworn to and subscribed before me this 10th day of August, 1928.

Joseph A. Curry
 Joseph A. Curry

Notary Public.
 (Official Character.)

My commission expires Dec 23, 1929

NOTE—Acknowledgment should be made before a Notary Public, who must sign his name. If executed before an officer not
 provided with a seal, the Certificate of the Judge or Clerk of County Court must be affixed, showing official character of such officer.

See Paper #10

962

Jan. 11, 29

Fig. 1.

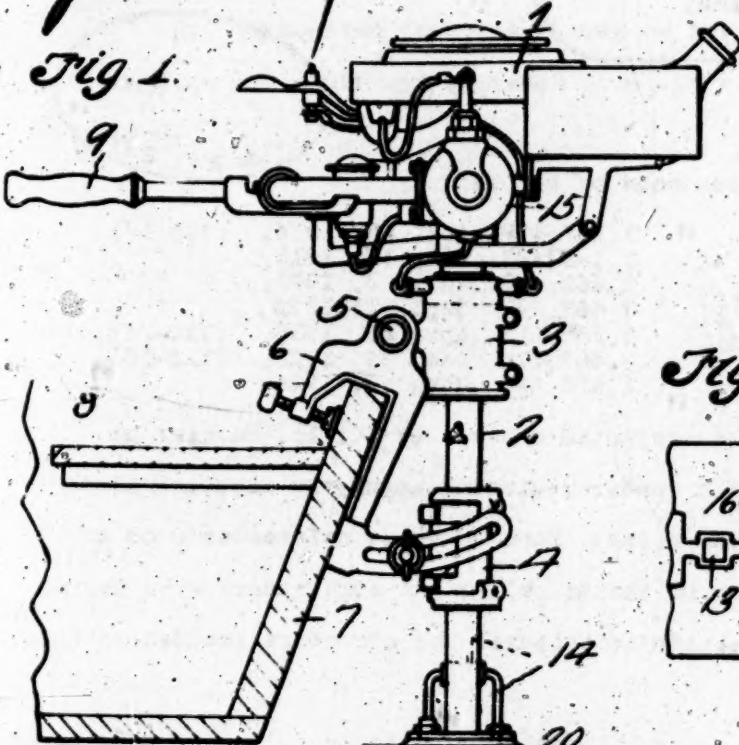


Fig. 3.

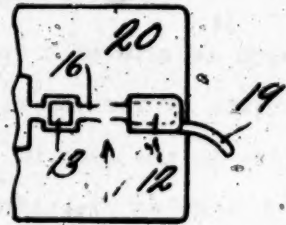
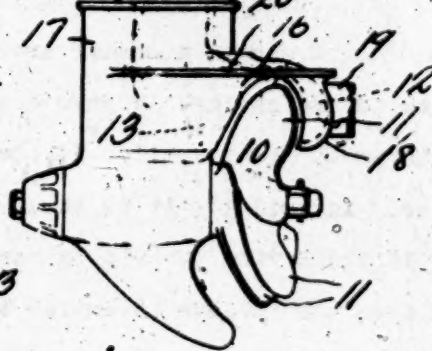


Fig. 2.



INVENTOR

Harry I. Johnson
BY George J. Black
ATTORNEY

115-24

131-10 1/2

22

115-18

16

Advertisement
This communication is for the purpose of
and not for publication.

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

LBC-MK

Please find below a communication from the EXAMINER in charge of this application.

December 15, 1926.

Thomas E. Robertson
Commissioner of Patents.

George-J. Oltsch,
711 J.M.S. Bldg.,
South Bend, Indiana.

Applicant: H. L. Johnson,

Ser. No. 131,534,
Filed Aug. 25, 1926,
For Outboard Motors.

15 1926
MAILED

References made of record:

Caille	1,107,408	Aug. 18, 1914,	(115-18)
Hult et al	1,146,427	July 13, 1915,	"
Buehner	1,460,570	July 3, 1923,	"
Johnson	1,467,641	Sept. 11, 1923,	"
Wagner	1,535,511	Apr. 28, 1925,	(115-34)
Johnson	1,567,512	Dec. 29, 1925,	(115-18)
Dawson	1,576,237	Mar. 9, 1926,	"

Claim 1 is rejected on each of Caille, Buehner or Dawson as showing a "water-resisting angularly disposed plate" rearward of the propeller. Each of these references show a rudder to the rear of the propeller but such rudder when turned to an angular position anticipates the structure recited in this claim.

Claim 1 is additionally rejected on Hult when considered with Wagner. Hult, Fig. 2, shows a member arching the propeller and rigidly attached to the casing. Wagner discloses construction means whereby the throw of the propeller is obviated, such means arches the propeller. Accordingly it is thought that to adapt the idea of Wagner to the device of Hult by merely curving it to the extent desired does not involve invention because Wagner has taught the idea.

Claims 2, 3, 6, 7, and 8 are rejected on Hult when considered with Wagner, supra.

Claims 4 and 5 are rejected for lack of invention over assignee's patent 1,567,512 when Hult and Wagner are considered.

Claims 9, 10 and 11 are rejected for lack of invention over assignee's patent 1,467,641 when Hult and Wagner are considered.

Ser. No. 131,534 -2-

It is required that the claims be restricted to matter which the applicant believes novel in view of the art cited.

J. H. L. M. L.
Examiner.



Waco L. J. King
Amato A
 DIV. XXV
 #3

In the United States Patent Office

DEC 14 1927

In re application of—

Filed—

U. S. PATENT OFFICE

Harry L. Johnson

August 25, 1926

For—

Serial—

Outboard Motor

131,534

Examiner's Room No. 244 Annex

The Commissioner of Patents:

In the above entitled matter please recognize Philip A. H. Terrell, Reg. No. 7312,
 Washington Loan & Trust Building, Washington, D. C., as my associate attorney.

All conflicting powers are hereby revoked.

George J. Pittch

131 13

16



THE UNITED STATES PATENT OFFICE

3444

In re-application of

Harry L. Johnson

OUTBOARD MOTORS

Filed Aug. 25, 1926

Ser. No. 131,534

Div. 22 Room 244 Annex

The honorable

The Commissioner of Patents

Sir:-

In response to the official action of Dec. 15, 1926, the above entitled application is hereby amended as follows:

a Claim 1, line 3, after "propeller" insert "said plate being constant in relation to the propeller"

a Claim 2, line 3, cancel "s" second occurrence and insert "an angularly disposed"

a Claim 5, line 6 after "propeller" insert "and extending in the direction of rotation of said propeller"

a Claim 5, line 6, after "propeller" insert "in constant relation to said propeller."

Claim 7, line 2 before "deflecting" insert "water"

a Claim 7, line 4 after "obviated" insert "in the direction of turn of the propeller."

a Claim 8, line 4 after "motor" insert "in the direction of turn of the propeller."

Add the following claims.

a 12 The combination with a marine propeller, of a water resisting plate cooperating therewith, whereby the side throw of the propeller is counteracted.

13 The combination with a marine propeller, of a water resisting plate adjacent said propeller and cooperating with the water whereby lateral transverse movement of the propeller in the direction of rotation thereof is prevented.

REMARKS.

Claim 1 has been amended to include the idea of the plate 19 being constant in relation to the propeller.

The Gaille patent does not show a water resisting plate but simply a pivoted rudder, nor does the Buehler patent show such a plate but a conventional form of pivoted rudder. Referring to the Dawson patent, this does not show an angularly disposed plate, but simply a drag plate which would have exactly the effect applicant is trying to avoid, for instance there would be a side wobbling from side to side of the motor and boat incident to the flow of water around the sides thereof, and if the plate is inclined to the dotted line position shown in figure 1, it would have a raising effect on the motor as a whole and a zig sawing from side to side as the boat advances through the water, therefore there is no relation between this patent and applicant's device as claimed.

Referring to the Wagner patent on which the Examiner apparently relies as his main reference, not only against claim 1, but against all of the claims, a study of this reference will show that the auxiliary propeller, located rearwardly of the main propeller and which auxiliary propeller is stationary would have an effect entirely different as the blades are radially disposed on opposite sides of the axis of the propeller, consequently would counteract each other, and would not overcome the side throw or movement incident to the direction of turn of the propeller. Wagner is simply attempting to break up the swirl adjacent the axis of the main propeller for causing the blades of the main propeller to have a greater driving efficiency on the water, therefore it is an entirely different idea, and could not produce the result claimed by applicant. The Hult patent shows an ordinary propeller and a conventional rudder arching the same, and which rudder is vertically disposed in the plane of the

9446

axis of the propeller, consequently is not a water resisting plate. Wagner does not teach the bending or angularly disposing of a plate to form a water resisting member, which would prevent the transverse side movement of a motor and the stern of a boat incident to the direction of turn of the propeller, and it is thought claim 1 is clearly patentable.

Claim 2, has been amended to include the idea of an angularly disposed water resisting plate, and the same argument applies thereto as set forth above relative to the Hult and Wagner references, and claim 2 as well as claims 3 to 8 include clearly avoid the Hult and Wagner citations and all of the references singly or collectively cited.

Referring to claim 4 and 5, these claims also include the idea of a member arching the propeller and also supporting the deflecting plate, and it is maintained it involves invention to support the plate on the arching member having the ports 15 and 25 as shown in the patent cited and issued to Johnson, and by which construction not only the water circulating system is properly located in relation to the propeller but also the plate 19, thereby supporting the same from a single bracket, consequently obviating bulky construction forwardly of the propeller, which would have a material water resisting effect and consequent reduction in speed of a boat, therefore it is clearly invention to combine these features.

Referring to claims 9, 10 and 11 it is conceded that cavitation plates are old in the art as shown in the patent to Johnson cited, but the combining of the cavitation plate with a member arching the side of the propeller whereby a simple structure is provided and one which will offer the least resistance to the water is thought to be an inventive idea especially as the combining of these ideas is not shown or even suggested in the references cited, particularly claim 9.

Claim 10 not only avoids the references for the reasons set forth in relation to claim 9 and claim 1, but also the

combining of the anti cavitation plate therewith. Claim 11 avoids the references cited against the same, as they do not show the water resisting member carried by the arching member and the anti cavitation plate carried by the casing at opposite sides of the arching member, which cavitation plate allows the use of a relatively light casing structure for arching the propeller and by locating the same in this particular position thoroughly reinforces the arching member.

In view of the above all of the claims 1 to 11 inclusive are resubmitted. New Claim 12 as well as 13 has been carefully drawn to the broad idea of means in association with a propeller whereby lateral side movement of the propeller or a boat to which the propeller is attached where a stationary propeller is used of the non pivoted type, which means will be water resisting and will counteract the lateral movement referred to in the direction of turn or throw of the propeller. None of the references singly or collectively show this idea, and it is thought these claims in their present form should be allowed.

A power of Attorney is filed herewith.

Respectfully submitted,

Harry L. Johnson

by

att'y.

1928

Clark

13 #4

DIV. XXII

JAN 20 1928

U. S. PATENT OFFICE

IN THE UNITED STATES PATENT OFFICE

In re-application of
 Harry L. Johnson
 OUTBOARD MOTORS

Filed Aug. 25, 1926
 Ser. No. 131,534
 Div. 22 Room 244 Annex

The honorable,
 The Commissioner of Patents
 Sir:-

SUPPLEMENTAL AMENDMENT

In the matter of the above entitled application
 the same is hereby amended as follows:

Add the following claims.

14 The combination with a pivotally mounted outboard motor having a propeller and means for driving said propeller, of a water resisting member in connection therewith and forming means whereby tendency to pivotal movement of the motor is counteracted.

15 The combination with a pivotally mounted outboard marine motor having a tendency to pivotal movement incident to operation thereof, of water resisting means cooperating therewith whereby said pivotal movement is substantially counteracted.

16 The combination with a pivotally mounted marine motor having a tendency to pivotal movement incident to operation thereof, of means cooperating with the water whereby said pivotal movement is substantially counteracted.

REMARKS

The new claims presented herewith are presented in view of the references and in view of the fact from the showing

131 18 21

in the references applicant is entitled to claims to the broad basic idea of means in connection with a pivotally mounted marine motor, (which motor has a tendency to pivotal movement) whereby said pivotal movement is counteracted, irrespective of the direction of the pivotal movement or the cause thereof.

Respectfully submitted,

Harry L. Johnson

by

Philip W. Miller

atty.



Sub *ally #15*
 ✓
 DIV. XXII

MAY 29 1928

U. S. PATENT OFFICE

Div. 22, Room 244 Annex,
 Harry L. Johnson,
 For OUTBOARD MOTORS,
 Ser. No. 131,534,
 Filed August 25, 1926.

IN THE PATENT OFFICE
 OF THE UNITED STATES.

Honorable Commissioner of Patents,
 Washington, D. C.

Sir:

I hereby appoint Cheever & Cox, a firm composed
 of Howard M. Cox and Ballard Moore, of Chicago, Illinois,
 as my associate attorney in the above entitled application
 with full power to grant associate powers and to receive all
 amendments and communications from the Patent Office.

Cheever & Cox
 Patent Lawyers
 Chicago

Howard M. Cox

Chicago, Illinois
 May 14, 1928.

Div. 22

Room 344 Annex

Paper No. 6

The Commissioner of Patents,
Washington, D. C.,
and not any official by name
HLS/so

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

All communications respecting this
application should give the serial number,
date of filing, and name of
the applicant

Please find below a communication from the EXAMINER in
charge of this application.

June 7, 1928

Thomas E. Robertson
Commissioner of Patents

Applicant: Harry L. Johnson

Cheever & Co.,
133 Monmouth Block,
Chicago, Ill.

Ser. No. 131,534
Filed Aug. 25, 1926
For Outboard Motors

JUN 7

In response to amendments of December 13, 1927 and January
19, 1928:

References added of record:

SIKORSKY, 1,560,869, Nov. 10, 1925, (244-29.6);
FISHER, 1,091,645, Mar. 31, 1914, (115-18);
"Design of Aeroplanes" by Arthur W. Judge,
published by James Selwyn & Co.,
20 Essex Street, Strand, London, W.C.2,
and 64 Fifth Avenue, New York, N.Y. in 1917,
page 8, lines 5 to 12, inclusive.

Claims 1, 2, 3, 12, 13, 14, 15 and 16 are rejected on Hult
in view of Sikorsky or the citation from the publication, supra.
Merely making Hult's rudder with a slight angle to counteract the
torque is not broadly patentable. Fisher, supra, shows the con-
ception of eliminating torque by means of springs in an outboard
motor. The rejected claims are broader than the invention in
that they would cover every possible means of accomplishing the
result, a result which is old and known to the art.

Claims 4, 5, 6, 7, 8, 9, 10 and 11 are allowed.

J. H. Johnson
Examiner

131-24

24

JUN 7 1928
U. S. PATENT OFFICE

Div. 22, Room 244 Annex.
Harry L. Johnson.
Ser. No. 131,534.
Filed August 25, 1926.
For OUTBOARD MOTORS.

IN THE PATENT OFFICE
OF THE UNITED STATES

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

POWER OF INSPECTION

Please permit Joseph Milburn, Esquire, to inspect
the above entitled application and make copies of papers
therein.

Cheever & Cox
Patent Lawyers
Chicago

Respectfully Submitted,

Cheever & Cox
attorneys for applicant.

Chicago, Ill.
June 5, 1928.

DEC 8 1928
U. S. PATENT OFFICE

Div. 22, Room 244 Annex,
Harry L. Johnson,
Ser. No. 131,534.
Filed August 25, 1926.
For OUTBOARD MOTORS.

IN THE PATENT OFFICE
OF THE UNITED STATES

AMENDMENT

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

In response to the office action of June 7, 1928,
kindly amend as follows:

Add the following claims:

17. In an outboard motor construction, in combination with a motor formed with a vertically depending drive shaft, means forming a bracket for attachment to the rear of a water vehicle and providing a pivotal mounting disposed in a horizontal plane, a support connected to said pivotal mounting for swinging about said horizontal axis for tilting movement, a tubular housing mounted in said first support for turning about said drive shaft as an axis, a housing mounted on the lower end of said tubular housing, and adapted to depend into the water, a propeller mounted on said latter housing and drivingly connected with the vertically disposed driving shaft, means for turning said tubular housing about said drive shaft, and means rigid with said second housing and adapted to engage the water during the passage of the housing through the water and constructed and arranged for substantially counter-acting the tendency of the housing to pivotally turn during the operation of the outboard motor.

18. In an outboard motor, the combination with a bracket adapted for attachment to a boat or the like, said bracket

Cheney, Cox & Moore
Patent Lawyers
Chicago

-2-

carrying a pivotal mounting, a bearing member mounted on said pivotal mounting for tilting movement, a self-contained power plant including an internal combustion engine having a substantially vertically depending drive shaft, a tubular support mounted for turning movement in said bearing about the vertically depending drive shaft as an axis, means for turning said tubular support, a propeller carrying casing rigidly mounted on the lower end of said tubular support, and turnable therewith, a propeller rotatably mounted on said casing and having driving connections with a vertically depending drive shaft, said driving connections being enclosed within said casing, and an anticavitation plate formed integral with said casing, said plate extending laterally and rearwardly of the casing and directly overlying the path of travel of the propeller blades.

19. In an outboard motor, the combination with a bracket adapted for attachment to a boat or the like, said bracket carrying a pivotal mounting, a bearing member mounted on said pivotal mounting for tilting movement, a self-contained power plant including an internal combustion engine having a substantially vertically depending drive shaft, a tubular support mounted for turning movement in said bearing about the vertically depending drive shaft as an axis, means for turning said tubular support, a propeller carrying casing rigidly mounted on the lower end of said tubular support and turnable therewith, a propeller rotatably mounted on said casing and having driving connections with a vertically depending drive shaft, said driving connections being enclosed within said casing,

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said casing having an arched portion formed integral therewith and extending directly over the path of travel of the propeller blades and closely adjacent thereto, said arched portion on each side of the path of travel of the propeller blades being formed with internal conduits leading upwardly through the casing and connecting with the water jacket of the motor, the rearmost portion of said arched part of the casing having a rearward water deflecting plate for the purpose set forth.

20. In an outboard motor, the combination with a water jacketed motor having a vertically depending drive shaft, a tubular sleeve surrounding said drive shaft, a bearing in which said tubular sleeve is turnable, means for tiltably supporting said bearing on a boat or other vehicle for pivotal movement about a substantially horizontal axis, a casing rigidly carried with the lower end of said tubular sleeve and turnable therewith, said casing being adapted to be submerged in the water during the travel of the boat, a propeller rotatably mounted on said casing for turning therewith, driving connections from said propeller to said substantially vertically depending drive shaft, an anti-cavitation plate formed integral with said casing and extending laterally and rearwardly thereof and directly overlying the path of travel of the propeller blades in their rotation, said casing having ^{an} internal passage terminating at a point below normal water level, the upper portion of said internal passage having a connection with the water jacket of the engine.

21. In an outboard motor, in combination with a water jacketed motor and having a substantially vertically depending drive shaft, a sleeve concentrically surrounding said drive shaft, a bearing in which said sleeve is mounted for turning,

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Chicago

means for tiltably mounting said bearing on a water vehicle, a casing rigidly mounted on the lower end of said tubular sleeve and adapted to turn therewith, a propeller turnable on said casing, driving connections for said propeller housed within said casing, said casing having internal water passages formed therein connecting with the water in which the casing is submerged at points below the normal water level thereof, the upper ends of said internal passages in the casing communicating with passages formed within the tubular sleeve, said passages in the tubular sleeve at their upper ends communicating with the water jacket of the motor and said casing having an integral ^{anti-}cavitation plate extending laterally and rearwardly and directly overlying the path of travel of the propeller blades during their rotation.

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22. In an outboard motor, in combination with a motor of the water jacketed type having a vertically depending drive shaft, a tubular sleeve concentrically surrounding said shaft, a bearing in which said sleeve is mounted for turning, means for supporting said bearing on a water vehicle for tilting movement about a substantially horizontal axis, a casing rigidly mounted on the lower end of said tubular sleeve for turning therewith, said casing having a lower portion of substantially cylindrical formation providing a propeller shaft housing, a propeller shaft mounted in said cylindrical housing portion, a propeller mounted on the rear end of said shaft, driving connections between said propeller shaft and the vertically depending drive shaft, said connections being housed within said casing, said casing having an anti-cavitation plate laterally formed therewith and lying approximately mid-way

between the cylindrical portion of the casing and the top of said casing, said anti-cavitation plate extending rearwardly and laterally with the rear portion overlying the path of travel of the propeller blades during their rotation.

23. In an outboard motor, in combination with the water jacketed cylinders of the motor, said motor having a substantially vertically depending drive shaft, a tubular sleeve concentrically surrounding said drive shaft, a bearing in which said sleeve is angularly turnable, a mounting for said bearing adapting the same to tilt about a substantially horizontal axis, a casing rigidly carried on the lower end of said sleeve, a propeller shaft mounted on the lower portion of said casing, a propeller on the end of said shaft, driving connections between said propeller shaft and the substantially vertically depending drive shaft, the driving connections being enclosed in the casing, said casing being provided with an internal water conduit opening on the exterior face of said casing below normal water level, said internal conduit passing upwardly through said casing and having connections with a water conduit passing within the peripheral plane of the tubular sleeve whereby to permit said sleeve to turn without interruption to the flow of water, the upper portion of said conduit connecting with the water jacket of the engine.

24. In a device of the class described, the combination of a self contained power unit including an internal combustion engine having a substantially vertically depending drive shaft, a tubular sleeve concentrically surrounding said drive shaft, a bearing in which said sleeve is turnable, means for mounting

Chas. E. Cox & Moore
Patent Lawyers
Chicago

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said bearing at the rear end of a water craft, said means including a tiltable mounting for said bearing which permits said bearing and tubular sleeve to tilt about a substantially horizontal axis, a housing rigidly mounted at the lower end of said tubular sleeve and adapted to turn therewith and tilt therewith, said housing depending downwardly and adapted to be substantially submerged in the water in the operation of the outboard motor, said housing including a somewhat cylindrically shaped horizontal portion providing a bearing for a propeller shaft, a propeller shaft mounted in said bearing, a propeller mounted on the end of said shaft, and driving connections between said substantially vertically depending drive shaft and said propeller shaft and enclosed within said housing, said housing having a laterally and rearwardly extending anti-cavitation plate formed therewith, directly overlying the path of travel of the propeller blades, and said housing extending upwardly above said anti-cavitation plate.

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25. In an outboard motor construction, the combination of an internal combustion engine of the water jacketed type and having a substantially vertically depending drive shaft, of a tubular sleeve surrounding said drive shaft, a bearing in which said tubular sleeve is rotatably mounted, said tubular sleeve being formed with an internal water conduit connected with the jacket of the engine, of a casing rigidly mounted on the bottom of said tubular sleeve, said casing having an integral casting provided with a substantially cylindrical lower portion forming a bearing for the propeller shaft, said cylindrical portion being provided with a horizontal opening, the upper portion of said casting having a vertical opening therethrough

through which said drive shaft depends, driving connections between said vertically depending drive shaft and said propeller shaft, said driving connections being housed within said casting, a propeller on the end of said propeller shaft, said casting having an integral laterally and rearwardly extending plate-like member overlying the path of travel of the propeller blades to form an anti-cavitation plate, and said casting having an internal passage communicating with the water below the normal water level and connecting with the internal passage in said propeller sleeve.

REMARKS

Shaw, Car & Moore

Patent Lawyers

Chicago

Favorable consideration of claims -1, 2, 3, 12, 13, 14, 15, and 16 is asked because the references cited by the Examiner do not meet either the spirit of the invention or the terms of the claims, either taken singly or in combination. Nor are the patents cited by the Examiner capable of combination because the Sikorski patent and the citation in the book "Design of Aeroplanes" cited by the Examiner, are not in analogous arts.

The Examiner must admit that the outboard motor art or the marine vehicle art fails to show the provision of a power propulsion device for a water vehicle together with a water deflecting means for counter-acting the tendency of the propeller to deflect the boat out of its true course, or to counter-act the turning movement on the tiller 9, due to the operation of the propeller.

Applicant's invention was the first disclosure to the marine art and particularly the outboard motor art of this

very successful means and most certainly the Examiner is not warranted in going into the aeroplane art for references such as he has cited. They have no bearing on the situation whatsoever and have not influenced the progress and advancement of the art of which this invention is a part.

The patent to Hult shows nothing more than an outboard motor with a rudder at the stern thereof, which of course is not applicant's invention.

The Examiner is not warranted in the assertion that there would be no invention in providing Hult's rudder, or any other part, with a slight angularity to counteract the torque. The Examiner has now shown this in the outboard motor art and how can he himself invent a reference to meet a claim?

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Patent Lawyers
Chicago

The patent to Fisher obviously shows the use of springs for eliminating torque. This patent shows an entirely different means for accomplishing applicant's function and hence this patent is not a reference. Applicant is not claiming spring means.

Patent to Sikorsky and the publication cited have nothing to do with outboard motors or marine motors or marine propulsion devices wherein the water acts upon a water deflecting surface to function as a counter-acting means. Aeroplanes and dirigibles are a non-analogous art.

In regard to the Examiner's rejection of the claims as being broader than the invention, applicant desires to point out that each of the rejected claims does not call broadly for all means but that each of the claims is specifically limited; for instance, claim 1 is restricted to a water resisting angularly disposed plate.

Claim 2 is limited to a water resisting plate.

Claim 3 is limited to a deflecting member curving outwardly in the direction of rotation of the propeller and disposed rearwardly of the propeller.

Claim 12 is limited to a water resisting plate cooperating with the propeller.

Claim 13 is limited to a water resisting plate adjacent said propeller and cooperating with the water.

Claim 14 is limited to a water resisting member in connection with a propeller and forming means etc.

Claim 15 is limited to water resisting means and claim 16 is limited to means cooperating with the water.

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How then, ^{can} the Examiner state that applicant is claiming every possible means? Such a rejection would tend to make applicant believe that the Examiner either does not appreciate the value of the English language or that he has not appreciated the invention claimed.

Consideration of the claims is asked.

Claim 17 includes in an outboard motor the arrangement of the tubular housing 2, the casing 17, together with means rigid with the housing adapted to engage the water for counter-acting the turning. This combination is not present in any of the prior art and for the reasons above given and is not present in any of the foregoing claims.

New claim 18 includes inter alia a tubular support carrying the casing and turnable for steering or for reversing the propeller and the driving connections housed within the casing and the anti-cavitation plate extending laterally and rearwardly, of the casing and overlying the path of travel. This is a new combination, not present in the references and substantially

along the lines of one of the allowed claims, although it is specifically different from the allowed claim.

Claim 19 includes among other elements, the propeller carrying casing mounted on the lower end of the tubular support and turnable therewith, with the casing enclosing the driving connections, together with the arched support and the internal water conduits in the portions of the arched support, one of the arched portions supporting the water deflecting plate. This claim is more specific than some of the former claims already allowed and is patentable thereover.

New claim 20 includes among other elements, the casing mounted on the lower portion of the tubular sleeve 2 together with the anti-cavitation plate formed integral with the casing and extending laterally and rearwardly in the internal water passage terminating below the normal water level and connecting with the water jacket of the engine. This claim is for a slightly different combination than the previous claims and is patentable over the art cited.

New claim 21 is slightly different from new claim 20 in that it includes a plurality of passages in the casing which communicate with the tubular sleeve and in addition this claim includes the anti-cavitation plate integral with the housing. This claim for similar reasons is patentable over the prior art and the foregoing claims.

New claim 22 includes the more or less specific location of the anticavitation plate 20 which is integral with the housing 17 and as being located substantially mid-way of the vertical height of the housing. This is new with this applicant and is

Wm. C. & Moore
Patent Lawyers
Chicago

not present in any of the prior art and certainly not in the former claims.

New claim 23 is specific to the arrangement of the internal water passage in the casing 17, passing upwardly and thence within the peripheral plane of the tubular casing 2 and connecting with the water jacket of the motor whereby the water may pass upwardly while permitting the free turning of the lower housing with the tubular sleeve 2.

New claim 24 is drawn specifically to the more or less exact construction of the lower casing 17 with the substantially cylindrically shaped bearing for the propeller shaft, the integral anti-cavitation plate 20, and that portion of the housing projecting above the anti-cavitation plate.

New claim 25 is drawn to the provision of a propeller carrying housing turnable for steering or reversing, if in a complete rotation, said casing being formed as a casting with an integral anti-cavitation plate therewith. This is new in the art and is a very important feature in outboard motor construction. This claim is drawn along the lines of claim 9 but includes the fact that the casing 17 comprehends a casting wherein the bearing for the propeller carrying shaft and the upper portion including the anti-cavitation plate are cast integral and in turn the casting is provided with internal passages for the driving connections, and a portion of the water circulating system. This is new and useful in the outboard motor art and tends to permit large increases in speed of the passage of the housing through the water.

Allowance of the claims is asked.

Respectfully submitted,

Chever & Co.
Attorneys for applicant.

December 5, 1928

131 33

©
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Patent Lawyers
Chicago



DIV XXII

JAN 22 1929

U. S. PATENT OFFICE

Div. 22, Room 244 Annex,
HARRY L. JOHNSON,
Outboard Motors
Ser. No. 131,534,
Filed Aug. 25, 1926.

IN THE UNITED STATES
PATENT OFFICE.

POWER OF ATTORNEY

Hon. Commissioner of Patents,
Washington, D.C.

Sir:

The firm name of Cheever & Cox having been
changed to Cheever, Cox & Moore, you are hereby
a firm composed of Howard M. Cox and Ballard Moore,
authorized to recognize said Cheever, Cox & Moore, as
attorneys in the above entitled case with such powers
as we may have.

Cheever, Cox & Moore

Patent Lawyers

Chicago

Respectfully,

Cheever & Cox

January 5, 1929.

131/34

MAR 30 1929
U. S. PATENT OFFICE

Div. 22, Room 244 Annex,
Harry L. Johnson,
Ser. No. 151,534,
Filed August 25, 1926.
For OUTBOARD MOTORS.

9118
IN THE PATENT OFFICE
OF THE UNITED STATES

AMENDMENT

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

ATTENTION IS CALLED TO AN ORAL INTERVIEW
HAD WITH THE PRIMARY AND ASSISTANT EXAMINERS.

Supplemental to the amendment dated December 5, 1928,
and in further response to the Office Action of June 7, 1928,
kindly amend as follows:

THE PRIMARY EXAMINER HAS CONSENTED TO PERMIT THIS
AMENDMENT TO TAKE ITS PLACE IN ORDER OF EXAMINATION AS OF
THE AMENDMENT FILED DECEMBER 5, 1928 AND TO BE CONSIDERED
THEREWITH.

Change the title of the invention to "Water
Propulsion Devices".

D'
Page 2 of the specification, line 1, cancel "Outboard
Motors" and substitute -water propulsion devices, particu-
larly of the outboard or inboard motor type. In the present
instance, the invention is illustrated as applied to an out-
board motor.

Page 3 of the specification, after line 15, insert
the following as a paragraph:

D²
- A further object of my invention resides in
providing the propeller-carrying-casing with an anti-cavitation
plate arranged so as to directly overlie the path of travel of
the propeller blades, and in forming the exterior surfaces of

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this casing relatively broad and smooth and extending them upwardly well above the plane of the anti-cavitation plate, whereby not only to permit the housing to travel through the water with minimum resistance and to provide rudder surfaces to assist in steering, but also to permit the flowing water to pass closely about the rear of the housing above the anti-cavitation plate to assist in preventing cavitation at the propeller. A further feature of this aspect of my invention resides in the fact that the propeller-carrying-casing as thus constructed, provides an enclosing housing for the drive and propeller shafts, the geared connections therebetween, and also for one or more water passages leading to the water jacket of the engine and terminating on the exterior face of the housing below normal water level, by which arrangement the propeller-carrying-casing can move through the water with minimum resistance and cooling water can be delivered to the water jacket of the motor.

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Patent Lawyers
Chicago

Page 5 of the specification, after line 28, insert the following paragraph:

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The propeller carrying casing 17 which is rigidly mounted on the lower end of the tubular sleeve or casing 2 surrounding the drive shaft forms a housing for the lower end of said depending drive shaft, for the propeller shaft on which the propeller 10 is mounted, and for the geared connections therebetween. It also houses the water discharge passage 12 and the water intake passage 13 which extend upwardly there-through and connect with suitable passages within the enclosing casing 2 leading to the jacket of the motor. This propeller-

carrying-casing 17 is provided with relatively broad smooth and unbroken exterior surfaces both below and above anti-cavitation plate 20. This plate 20 preferably directly overlies the uppermost path of travel of the propeller blades 11, and it will be seen that the outer walls of this casing extend from the barrel-like portion 21 of the casing upwardly considerably above the anti-cavitation plate. In fact, the anti-cavitation plate is located substantially midway the top of the casing and the barrel-like portion of the casing in which the propeller shaft is directly mounted. By means of this construction, when the device is propelling the boat through the water, the water will flow with minimum resistance past these relatively smooth and substantially stream-line surfaces, thereby cutting down resistance to a minimum. By extending these smooth surfaces of the casing upwardly for a considerable distance above the anti-cavitation plate 20, the water flowing past the surfaces of the casing which are above the anti-cavitation plate will tend to follow the wall surfaces at the rearmost part of the casing and will flow inwardly and rearwardly above and over the anti-cavitation plate, thus creating a substantial body of flowing water directly over the cavitation plate and thus assisting the latter in preventing the formation of air pockets or cavitation at the propeller. In addition, by thus forming this propeller-carrying-casing with these relatively smooth walls which extend a considerable distance upwardly and also rearwardly, I provide relatively broad surfaces giving a rudder effect to assist the propeller in its steering movements as for instance when the housing is angularly turned to steer the boat in different directions.

W. C. & M. C.
Patent Lawyers
Chicago

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Cancel claims 17 to 25, included in the amendment dated November 5, 1928, and substitute the following:

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 9. A propulsion device for water vehicles comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor having its drive shaft disposed ^{within} ~~concentrically~~ ~~with the axis of~~ the drive shaft casing and said shaft passing downwardly through said casing, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion, and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly from said barrel-like portion and provided considerably below its top with an anti-cavitation plate extending rearwardly therefrom and overlying the ^{forward} ~~path of travel~~ of the propeller blades. *Q.E.*

Pu E
91
Pu E
 10. A propulsion device for water craft comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed ^{within} ~~concentrically with the axis of~~ the drive shaft casing, said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion adapted to house the propeller shaft and its

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driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly from said barrel-like portion and provided with an anti-cavitation plate extending rearwardly therefrom and overlying the path of travel of the propeller blades, said housing having smooth and unbroken outer wall surfaces at each side thereof extending upwardly from the said barrel-like portion to said plate and upwardly well above said plate to the top of the housing,

11. -28. A propulsion device for water craft comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed ^{within} ~~concentrically with the axis of~~ the drive shaft casing and said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turning therewith, said housing including a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly from said barrel-like portion and provided well below its top with an anti-cavitation plate extending rearwardly therefrom overlying the path of travel of the propeller blades and said housing having a substantially vertical internal passage leading to the water jacket of the engine, said passage opening at a point below normal water level.

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Chicago

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12. A propulsion device for water craft having a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed ^{within} ~~concentrically~~ with the axis of the drive shaft casing and said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing having an anti-cavitation plate extending rearwardly therefrom overlying the ^{forward} ~~path~~ of travel of the propeller blades, said housing having unbroken outer wall surfaces at each side extending upwardly from the said barrel-like portion to said plate and from said plate upwardly a substantial distance to the top of the housing, and said housing having a substantially vertical internal passage leading to the water jacket of the engine, said passage opening below the normal water level.

13. The combination of a water propulsion device ^{vertically extending} having a turnable propeller shaft casing, a propeller mounted thereon, means for turning said ^{the} casing for steering, said casing having an anti-cavitation plate cast integral therewith and located ^{in a plane above} ~~over~~ the propeller.

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"E"
Chaver, Cox & Moore
Patent Lawyers
Chicago

Per E
Inventor
(H)

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146
vertically extending
 The combination of a water propulsion device having a turnable propeller shaft casing, a propeller mounted thereon, means for turning said casing for steering, said casing having smooth and unbroken walls extending upwardly and provided with an integrally cast anti-cavitation plate substantially midway of its height *in a plane above* and ~~adapted to rotate~~ the propeller blades. *(sig)*

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pr
 In the amendment of December 5, 1928, at page 9, cancel the last 12 lines on the page; cancel page 10, and page 11.

Add the following remarks:

note
 The claims of the prior amendment dated December 5th, having been cancelled and these new claims substituted therefor because these new claims present the subject matter in a manner more along the lines of an interview had with the primary and assistant examiner. While they are substantially the same in substance, these claims differ in verbage and form to cover certain formal objections brought out by the examiner.

These new claims are wholly allowable over any art known to applicant and are allowable over any art heretofore presented by the examiner. Applicant is the first to provide a propeller-carrying-casing on the lower end of the tubular housing surrounding the drive shaft, and which casing is turnable for steering by means of a propeller and which casing is formed with the following highly advantageous characteristics:

1. The exterior walls of the casing are formed as smooth and unbroken surfaces to present a minimum resistance to the flowing water so as not to cut down the speed of the device.
2. These walls are provided well below their top with an anti-cavitation plate which overlies the path of travel of the

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 Chicago

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propeller blades. By this construction a very secure mounting for the anti-cavitation plate is provided. In certain aspects of the invention, this anti-cavitation plate may be cast integrally with the walls of the housing, thereby to facilitate the formation of the housing walls as smooth superficial surfaces and whereby to greatly strengthen the housing and the anti-cavitation plate mounting. This has been brought out in certain of the claims.

3. The projection of these smooth housing walls well above the anti-cavitation plate has a particular function in permitting the water which flows past the housing above the anti-cavitation plate to follow closely the rear walls of the housing directly above the plate and thereby substantially form a blanket of water directly over this plate to assist the plate in preventing air being sucked down into the propeller zone, thus preventing cavitation.

4. In addition, by thus forming these exteriorly smooth walls of the housing, they provide relatively broad rudder surfaces which assist the propeller in steering.

5. In addition by providing the casing with these upwardly extending and rearwardly extending smooth superficial walls, there is provided an enclosing casing for the lower end of the drive shaft, for the propeller shaft, for the geared connections therebetween, and also for one or more water passages leading from a point below normal water level upwardly to and from the water jacket of the engine.

The foregoing construction is a most important contribution to the art since the only portion of the water propulsion

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device which is submerged has smooth surfaces and encloses all parts which might offer resistance to the water, while at the same time, this submergible portion is formed in the manner to permit cooling water to be drawn upwardly to the water jacket of the engine and likewise discharged downwardly if desired, without adding additional resistance to the flow of the water.

In the new claims, claim 26 differs from any prior claims in the case in bringing out certain of the before-mentioned features, including the anti-cavitation plate carried by the housing.

Claim 27 is a bit more specific than claim 26 and brings out the fact that the walls are smooth and unbroken above the anti-cavitation plate.

Claim 28 includes certain of the foregoing features in combination with the internal water passage formed in the housing.

Claim 29 includes all of the features of claims 26, 27, and 28.

Claim 30 is drawn along the lines of allowed claim 9 and brings out the fact that the anti-cavitation plate is cast integral with the housing.

Claim 31 brings out the relation of the smooth walls of the casing and the integrally cast anti-cavitation plate.

Allowance of this application is solicited.

Respectfully submitted,

Charles Cox & Moore
Attorneys for applicant.

Chicago, Ill.
March 19, 1929.

131 43

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Lawyer, Cox & Moore

Patent Lawyers

Chicago

11-10

Div. 22, Room 244 Annex,
Harry L. Johnson,
Ser. No. 131,534.
Filed August 25, 1926.
For OUTBOARD MOTORS

IN THE PATENT OFFICE
OF THE UNITED STATES

SUPPLEMENTAL OATH

State of Illinois }
County of Lake } ss.

HARRY L. JOHNSON, being duly sworn, deposes and says that he is the applicant whose application for Letters Patent of the United States for an improvement in OUTBOARD MOTORS was filed on the 25th day of August, 1926, Serial No. 131,534; that the subject matter set forth in the specification as finally amended and claimed in the claims in said application, is his invention; was invented by him before he filed said application; was not known or used before his invention; was not patented or described in any printed publication in any country more than two years before his application; was not patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months before said United States application; was not in public use or on sale in this country for more than two years before the date of said United States application; and has not been abandoned.

Chenow, Car & Moore
Patent Lawyers
Chicago

Harry L. Johnson

Subscribed and sworn to before me this 22nd day of March, 1929.

Viola Hoff
Notary Public

(SEAL)

DIV. XXII

APR 27

U. S. PATENT OFFICE

Div. 22, Room 244 Annex,
HARRY L. JOHNSON,
Serial No. 131,534,
Filed August 25, 1926,
For OUTBOARD MOTORS.

IN THE PATENT OFFICE
OF THE UNITED STATES

REVOCATION OF PREVIOUS
POWERS OF ATTORNEY AND

POWER OF ATTORNEY TO
CHEEVER, COX & MOORE.

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

In my application for patent for OUTBOARD MOTORS
filed August 25, 1926, Serial Number 131,534, I HEREBY REVOKE
ALL PREVIOUS POWERS OF ATTORNEY AND HEREBY APPOINT Cheever, Cox
and Moore, a firm composed of Howard M. Cox and Ballard Moore,
1133 Monadnock Bldg., Chicago, Illinois, my attorneys with
full power of substitution and revocation, to prosecute this
application, to make alterations and amendments therein, to
receive the patent and to transact all business in the Patent
Office connected therewith.

Cheever, Cox & Moore
Patent Lawyers
Chicago

Waukegan, Illinois.

April 9, 1929.

Accepted

APR 29 1929

J. E. Quinn
Commissioner



DIV. XXII

APR 27 1929

U. S. PATENT OFFICE

DIVISION 22, ROOM 244, ANNEX,
HARRY L. JOHNSON,
For OUTBOARD MOTORS,
Ser. No. 131,534,
Filed August 25, 1928.

IN THE PATENT OFFICE
OF THE UNITED STATES.

POWER OF ATTORNEY.

Honorable Commissioner of Patents,
Washington, D.C.

Sir:

WE HEREBY APPOINT James T. Newton of 715 G. St.,
Washington, D.C., our associate in the above entitled
case.

Cheever, Cox & Moore
Patent Lawyers
Chicago

Please address all mail to Mr. Newton in care
of us at our Chicago address.

Respectfully yours,

Cheever, Cox & Moore
Attorneys for Applicant.

CHICAGO, April 9, 1929.

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DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

May 3, 1939.

Cheever, Cox and Moore,
1133 Monadnock Bldg.,
Chicago, Ill.

Applicant Harry L. Johnson
Serial No. 131,534
Filed August 25, 1936
For Water Propulsion Devices

In this case your power of attorney has been accepted.

Respectfully,

Thomas E. Robertson
Commissioner.

Revoking power of attorney
to

George J. Oltsch,
711 J. N.S. Bldg.,
South Bend, Indiana.

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Also P of ally
+ 74
 DIV. XXII

MAY 8

U.S. PATENT OFFICE

DIVISION 22, ROOM 244, Annex,
 HARRY L. JOHNSON,
 For OUTBOARD MOTORS,
 Ser. No. 131,534,
 Filed August 25, 1936.

IN THE PATENT OFFICE
 OF THE UNITED STATES.

POWER OF ATTORNEY.

Honorable Commissioner of Patents,
 Washington, D.C.

Sir:

WE HEREBY APPOINT James T. Newton of 715 G. St., Washington, D.C., our associate in the above entitled case.

Please address all mail to Mr. Newton in care of us at our Chicago address.

Respectfully yours,

Cheever, Cox & Moore
 Attorneys for Applicant.

CHICAGO, April 8, 1939.

Cheever, Cox & Moore
 Patent Lawyers
 Chicago



Amend & add
Affidavits
Pure DIV. XII #10

MAY 9 1929
 U.S. PATENT OFFICE
 9437

AMENDMENT

IN THE UNITED STATES PATENT OFFICE

In re application of
 HARRY L. JOHNSON,
 Ser. No. 131,534,
 Filed August 25, 1926,
 For OUTBOARD MOTORS

Division 22,
 Room 244 Annex

Washington, D. C.,
 May 9, 1929

Hon. Commissioner of Patents,
 Washington, D. C.

Sir:

Supplemental to the amendments already filed in this case and in view of an interview with the Primary Examiner please cancel the following claims: 1, 2, 3 and 12 to 18 both inclusive.

Claim 26, lines 4 and 5 cancel "concentrically with the axis of" and insert -within-. Same claim, line 15 before the word "travel" insert forward-. At the end of the claim change the period (.) to a comma (,) and insert
 and said housing having substantially vertical internal inlet and outlet passages leading to and from the water jacket of the engine both passages opening below normal water level.

Claim 27, line 5 cancel "concentrically with the axis of" and insert -within-. Same claim, line 14 before "path" insert -forward-. At the end of the claim change the period (.) to a comma (,) and insert and said housing
 having substantially vertical internal inlet and outlet passages leading to and from the water jacket of the engine both passages opening below normal water level.

Claim 28, line 5 cancel "concentrically with the axis of" and insert -within-. Same claim, line 15 before "travel" insert -forward-

Ser. No. 131,534 --- #2

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Claim 29, line 5 cancel "concentrically with the axis of" and insert -within-. Line 14, before "travel" insert -forward-

Claim 30, line 2, before the word "turnable" insert -vertically extending-. Same claim, line 5 cancel the word "over" and insert -in a plane above-

Claim 31, line 2, before "turnable" insert -vertically extending- Line 7, cancel the words "adapted to overlies" and insert -in a plane above-

REMARKS

We are filing herewith an affidavit under Rule 75 to antedate the patent to Pierce 1,579,834, April 6, 1926 (application filed October 10, 1924) which was called to the attention of the Attorney at the interview. This affidavit when taken in connection with the blue print filed therewith shows a completion of this invention before the filing date of the Pierce patent and we believe that with the elimination of this patent and with the amendments above to claims 26, 27, 28, 29, 30 and 31 which are formal in character, the application is in condition for allowance and such action is requested.

Respectfully submitted,

HARRY L. JOHNSON

By J. S. Keston
Attorney

#15



DIVISION 22, ROOM 244 ANNEX
HARRY L. JOHNSON
SER. NO. 131,534,
Filed August 25, 1928.
FOR OUTBOARD MOTORS

IN THE PATENT OFFICE
OF THE UNITED STATES

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

AFFIDAVIT UNDER RULE 75

Louis J. Johnson, being duly sworn, deposes and says that he is Vice President of the Johnson Motor Company at Waukegan, Illinois, manufacturers of outboard motors; that he is President of the Johnson Brothers Engineering Corporation of South Bend, Indiana, inventors and engineers for the development of outboard motors for the Johnson Motor Company; that he has had charge of such supervision since 1922; that he has read the application of Harry L. Johnson, above identified, and is familiar with the disclosure thereof; that he has read the affidavit of Harry L. Johnson, identified in the above entitled application and has examined the blueprint L-5 accompanying same, and is able to certify of his own knowledge that the facts set forth in the affidavit of Harry L. Johnson are true and that he knows of his own knowledge that the construction set forth in blueprint L-5 aforesaid is the lower unit, or propeller carrying housing of a conventional outboard motor, invented by Harry L. Johnson prior to June 1st, 1924.

AND further deponent saith not.

L. J. Johnson

COUNTY OF LAKE
STATE OF ILLINOIS) SS

Subscribed and sworn to before me this
24th day of April, 1929.

Vivian Hall
Notary Public

SEAL

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Division 22, Room 244 Am
 HARRY L. JOHNSON
 SER. NO. 151,534,
 Filed August 25, 1926.
 For OUTBOARD MOTORS

IN THE DISTRICT COURT
 OF THE UNITED STATES

Honorable Commissioner of Patents,
 Washington, D.C.

AFFIDAVIT UNDER RULE 75

Harry L. Johnson, being duly sworn, deposes and says that he is Assistant Chief Engineer of the Johnson Motor Company of Waukegan, Illinois, manufacturers of outboard motors; that he is one of the members of the Johnson Brothers Engineering Corporation of South Bend, Indiana, inventors and engineers for the development of gas engines, outboard, inboard motors and other marine engines; that he has supervision of the development of Johnson outboard motors manufactured by the Johnson Motor Company aforesaid, which company is the largest manufacturer and distributor of outboard motors in the world; that he is thoroughly acquainted with the construction and operation of outboard motors; that he is the inventor of the subject matter disclosed in the application of Harry L. Johnson identified; that he invented the subject matter thereof long prior to the first of June, 1924; that long prior to the first of June, 1924, he invented the construction set forth on blueprint L-5 accompanying and made part of this affidavit, which blueprint shows the lower propeller carrying housing of a conventional outboard motor; that the design of housing shown in this blueprint was usable either on the lower unit of the conventional outboard motor in which the motor was turnable for steering, as illustrated in the drawing of the above identified application, or said housing was usable with a motor boat on which the motor was stationary and the boat was steered by use of a rudder, the blueprint showing a lug to which a rudder could be connected when this housing was used with a motor boat that did not have a turnable motor; that the construction shown on this blueprint was under his supervision at the Johnson Motor Company's Plant at South Bend, Indiana prior to June 1st/ 1924; that the initials "H.L.J." at the lower right hand corner

of blueprint are affiant's own initials;

AND affiant also states that he does not know and does not believe that invention has been in public use or on sale in this country, or patented or described in a printed publication in this or any foreign country more than two years prior to his application, and that he has never abandoned this invention.

AND further, deponent saith not.

Harvey L. Schuman

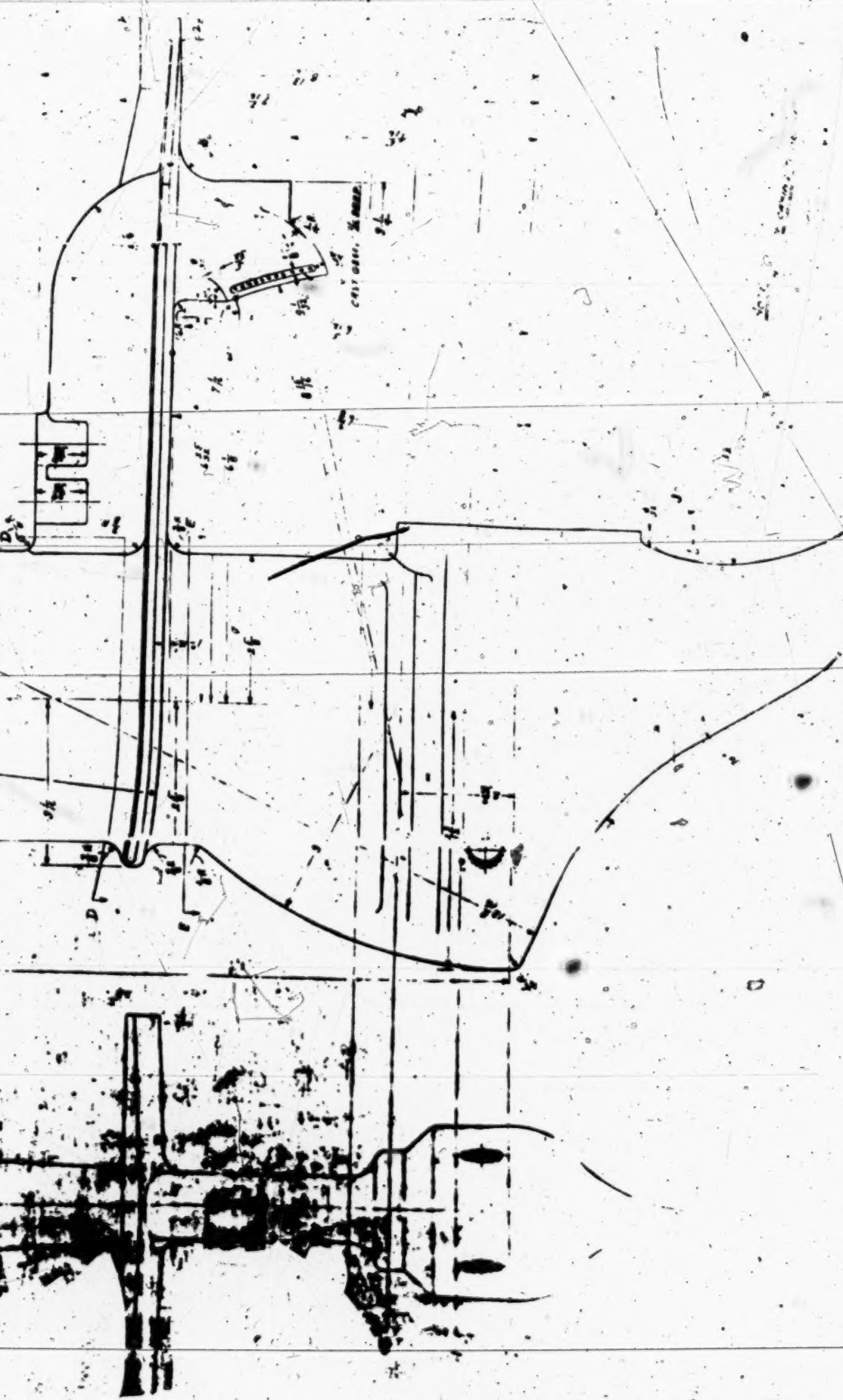
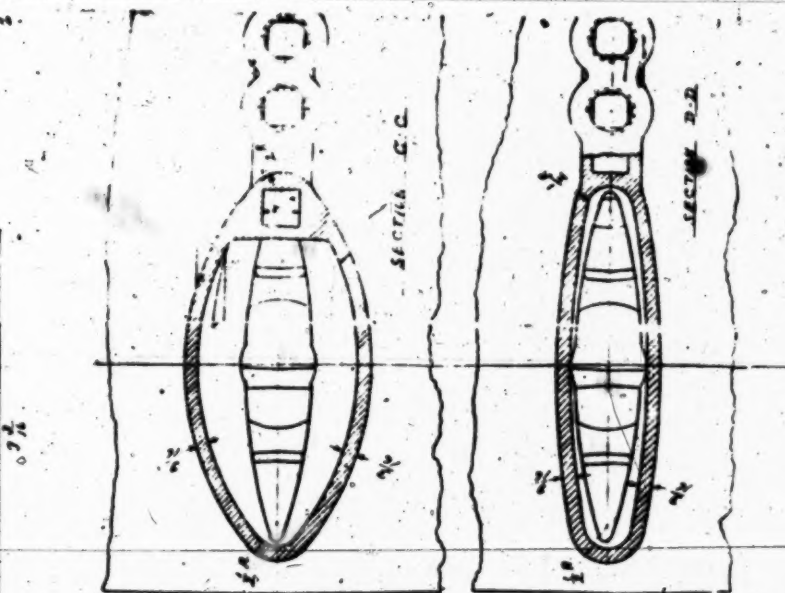
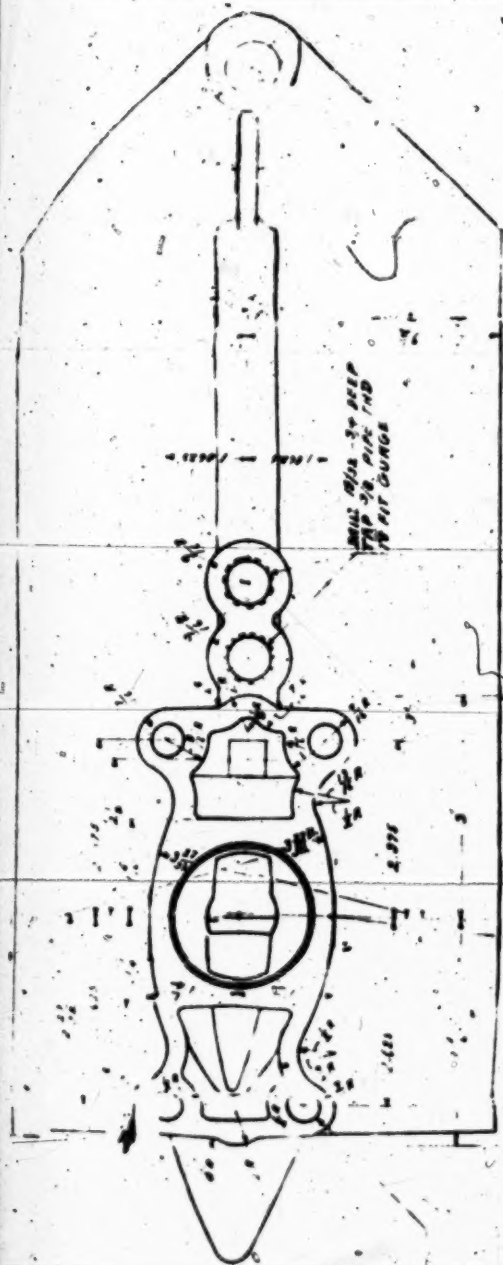
MOORE, Cox & Moore
Patent Lawyers
Chicago

COUNTY OF LAKE)
STATE OF ILLINOIS) SS.

Subscribed and sworn to before me this 6th day of
May, 1929.

Viola Hoff
Notary Public

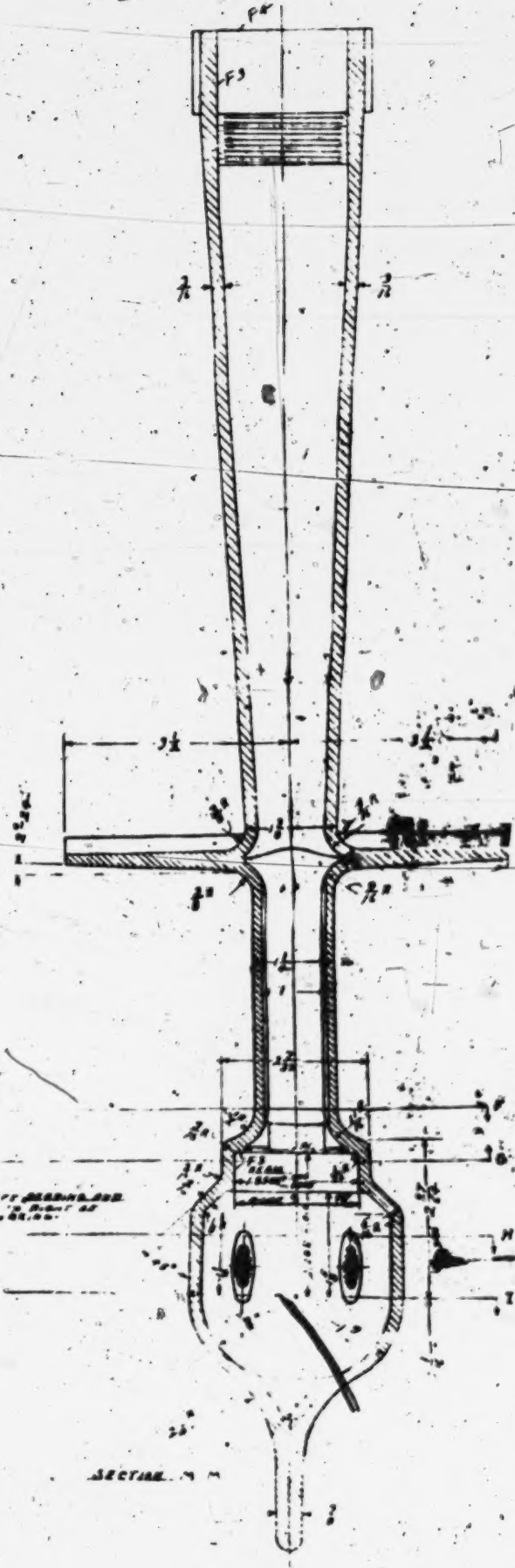
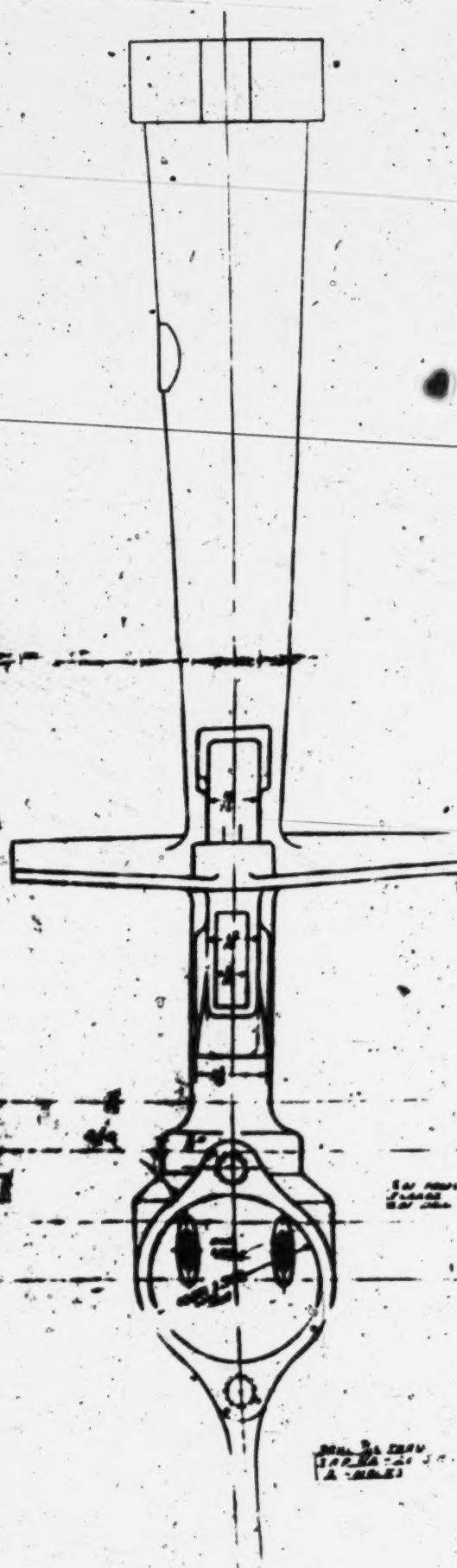
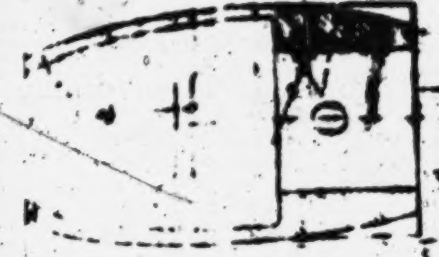
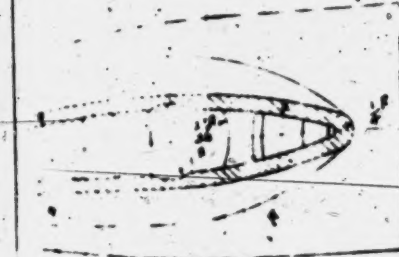
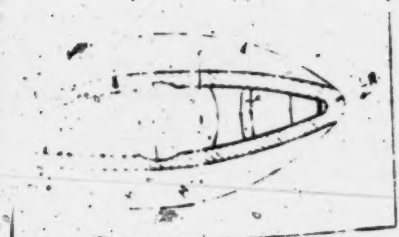
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SECTION A-A

SECTION B-B

No. 22

Room 244 Annex

1926

SH:D

Paper No. 16

Address only
 "The Commissioner of Patents,
 Washington, D. C."
 and not any official by name

DEPARTMENT OF COMMERCE
 UNITED STATES PATENT OFFICE
 WASHINGTON

All communications respecting this
 application should give the serial number,
 date of filing, and name of
 the applicant.

Please find below a communication from the EXAMINER in May 10, 1929
 charge of this application.

Thomas E. Robertson
 Commissioner of Patents.

Applicant: H.L. Johnson

Ser. No. 131,534
 Filed Aug. 25, 1926
 For Water Propulsion
 Devices

James T. Newton
 & Cheever, Cox & Moore
 1133 Monadnock Bldg.
 Chicago, Ill.

MAY 10 1929

In response to amendments of December 6, 1928, March 28,
 1929 and May 9, 1929.

References added to the record:

	Pierce	1,579,834	Apr. 6, 1926	115-17	
	Thorsen	871,459	Nov. 19, 1907	115-18	
	Smith	1,226,400	May 15, 1917	115-17	
Br.	Lanchester	14,792	July 2, 1902	115-18	1 sheet

Since the last rejection on June 7, 1928, applicant has submitted three separate amendments, apparently in an effort to prepare the case in condition for allowance.

The amendments have been such that the claims now emphasize the anti-cavitation plate rather than the anti-torque plate. The claims include a casing which encloses water-cooling passages, which casing carries an anti-cavitation plate. Pierce, supra, shows a casing which encloses water-cooling passages, but in view of applicant's affidavit under Rule 75, Pierce is unavailable as a reference.

Claims 1, 2, 3, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25 stand cancelled.

Claims 30 and 31 are rejected on Smith in view of Lanchester who shows an integral anti-cavitation plate in an out-board motor which is turnable for steering. Smith shows an out-

Serial No. 131,534-----#2.

board motor of the vertical type, in combination with an anti-cavitation plate. To make Lanchester's motor vertical as shown by Smith, or to make Smith's anti-cavitation plate integral as shown by Lanchester is uninventive.

Claim 31 is further rejected on Thorsen in view of Lanchester, who shows the integral anti-cavitation plate which it would be uninventive to cast on Thorsen's casing, which is turnable for steering.

Claims 4,5,6,7,8,9,10,11,26,27,28 and 29 are allowed.

J. H. Smith
Examiner

DEV. XII #17

MAY 11 1929

U. S. PATENT OFFICE 9459

AMENDMENT
IN THE UNITED STATES PATENT OFFICE

In re application of
HARRY L. JOHNSON,
Ser. No. 131,534,
Filed August 25, 1926,
For **OUTBOARD MOTORS**

Division 22,
Room 244 Annex

Washington, D. C.,
May 10, 1929

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In response to the Office Action of May 10,
1929 please amend this case as follows:

of 11 Claim 30, line 2 after the word "casing" insert
provided with an internal water passage, opening
below normal water level.

of 2 Claim 31, line 2 after "casing" insert
provided with an internal water passage, opening below nor-
mal water level.

REMARKS

Applicant has amended claims 30 and 31 to in-
clude the interwater passage in the turnable propeller
shaft casing, this water passage being arranged to open
below the normal water level.

It is believed that this amendment differentiates
these claims from the references cited and that both
claims are now allowable over the references. It is under-
stood from the interview between applicant's attorney and
the Examiner that with ^{this} / amendment these claims will be
allowed.

Respectfully submitted,

HARRY L. JOHNSON

By *J. F. Norton* 59
attorney.

131 60

Division 22

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

May 13, 1929

Harry L. Johnson, Assor.

Your APPLICATION for a patent for an IMPROVEMENT in

Water Propulsion Devices
filed 8-25-26 has been examined and ALLOWED with 14 claims.

The final fee, TWENTY DOLLARS, WITH \$1 ADDITIONAL FOR EACH CLAIM ALLOWED IN EXCESS OF 20, must be paid not later than SIX MONTHS from the date of this present notice of allowance. If the final fee be not paid within that period, the patent will be withheld, but the application may be renewed within one year after the date of the original notice with a renewal fee of \$20 and \$1 additional for each claim in excess of 20.

The office delivers patents upon the day of their date, on which date their term begins to run. The preparation of the patent for final signing and sealing will require about four weeks, and such work will not be begun until after payment of the necessary final fee.

When the final fee is paid, there should also be sent, DISTINCTLY AND PLAINLY WRITTEN, the name of the INVENTOR, TITLE OF THE INVENTION, AND SERIAL NUMBER AS ABOVE GIVEN, DATE OF ALLOWANCE (which is the date of this circular), DATE OF FILING, and, if assigned, the NAMES OF THE ASSIGNEES.

If it is desired to have the patent issue to an ASSIGNEE OR ASSIGNEES, an assignment containing a REQUEST to that effect, together with the FEE for recording the same, must be filed in this office on or before the date of payment of the final fee.

After issue of the patent, uncertified copies of the drawings and specifications may be purchased at the price of TEN CENTS EACH. The money should accompany the order. Postage stamps will not be received.

The final fee will NOT be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

NOTICE.—WHEN THE NUMBER OF CLAIMS ALLOWED IS IN EXCESS OF 20, NO SUM LESS THAN \$20 PLUS \$1 ADDITIONAL FOR EACH CLAIM IN EXCESS OF TWENTY CAN BE ACCEPTED AS THE FINAL FEE.

Respectfully,

Thomas E. Robertson
Commissioner of Patents.

James T. Newton
Chaever, Cox & Moore
1133 Monadnock Bldg.
Chicago, Illinois

131 6

MAY 13 1929

IN REMITTING THE FINAL FEE GIVE THE SERIAL NUMBER AT THE HEAD OF THIS NOTICE.

REC'D

MAY 15 29

C.C.U.S. PAT. OFFICE

FINAL FEE PAID TO THE COMMISSIONER OF PATENTS

(Be careful to give correct Serial No.)

Serial No. 131,534

INVENTOR:

HARRY L. JOHNSON

PATENT TO BE ISSUED TO

HARRY L. JOHNSON

NAME OF INVENTION, AS ALLOWED:

OUTBOARD MOTORS

DATE OF PAYMENT:

MAY 13, 1929

FEE:

TWENTY DOLLARS

DATE OF FILING:

AUGUST 25, 1926

DATE OF CIRCULAR OF ALLOWANCE:

The Commissioner of Patents will please apply the accompanying fee as indicated above.

J. J. Newton
Attorney.

SEND PATENT TO

CHEEVER, COX & MOORE,

MONADNOCK BUILDING,

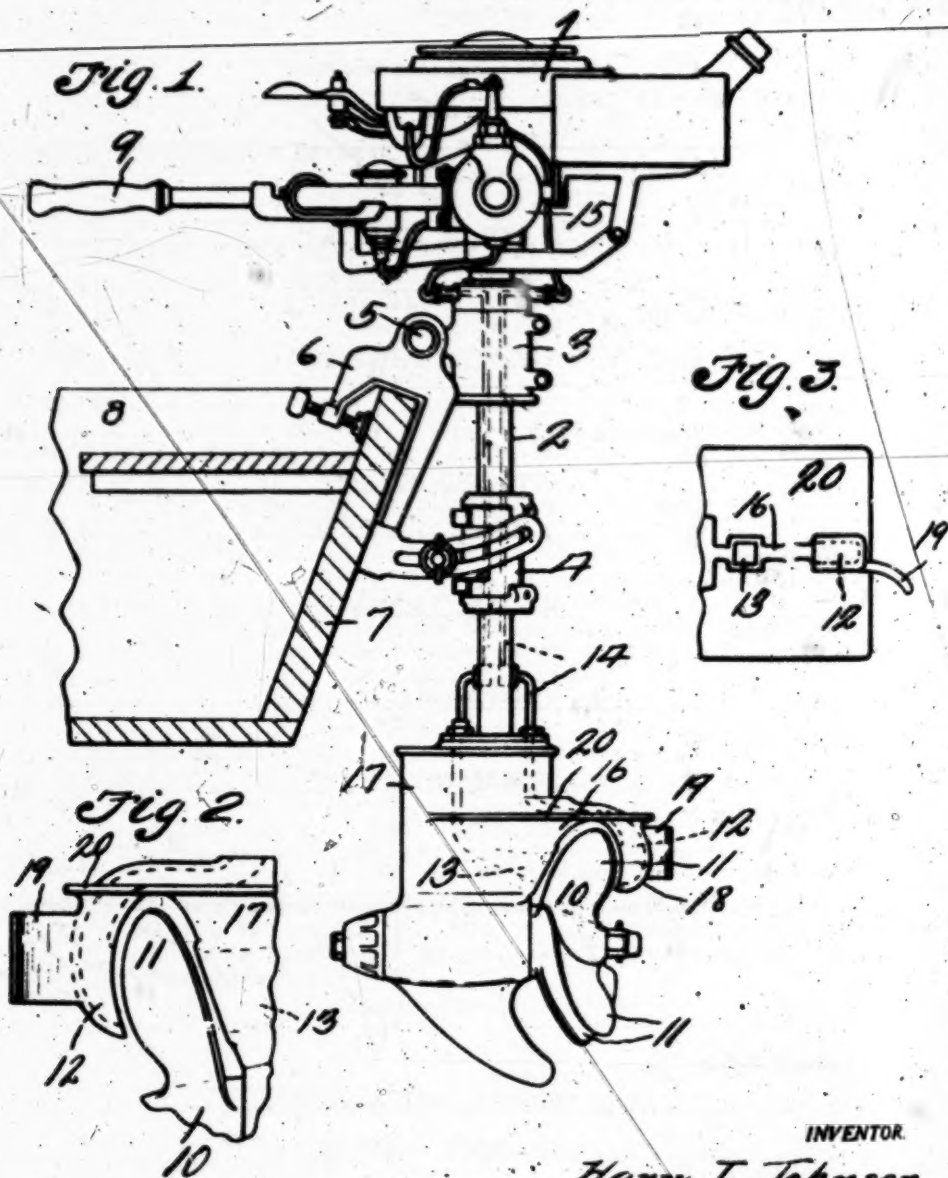
CHICAGO, ILLINOIS

Final fees will not be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

June 11, 1929.

H. L. JOHNSON
WATER PROPULSION DEVICE
Filed Aug. 25, 1926

1,716,962



INVENTOR.

Harry L. Johnson
BY *Gregory J. Ottick*
ATTORNEY

UNITED STATES PATENT OFFICE.

HARRY L. JOHNSON, OF SOUTH BEND, INDIANA, ASSIGNOR TO JOHNSON BROTHERS ENGINEERING CORPORATION, OF SOUTH BEND, INDIANA, A CORPORATION OF INDIANA.

WATER PROPULSION DEVICE

Application filed August 25, 1926. Serial No. 131,304.

The invention relates to water propulsion devices, particularly of the outboard or inboard motor type. In the present instance, the invention is illustrated as applied to an outboard motor, particularly of the pivotally mounted type wherein the motor as a whole is pivotally moved during the steering operation, and has for its object to provide the lower end of the motor rearwardly of the propeller with a water resisting plate against which the water is forced by the propeller, and which plate counteracts the side movement of the motor as well as the pivotal movement thereof in its bearing, thereby allowing the operator to steer a straight course while holding the tiller and without the strain on the hand, incident to the side throw referred to.

A further object is to provide a deflecting plate rearwardly of the propeller, said deflecting plate curving rearwardly and outwardly in the direction of rotation of the propeller, and against which plate water projected rearwardly by the propeller engages and counteracts the pivotal movement of the motor, thereby relieving the strain on the operator's hand while gripping the tiller during a steering operation.

A further object is to provide the lower end of the drive shaft casing with a casting which supports the propeller and propeller shaft and said casting with a member arching the upper side of the propeller and having intake and discharge ports leading to the engine jacket, and a water resisting deflecting plate carried by said casting rearwardly of the propeller blade, and by the rear portion of the portion of the casting which arches the propeller. Also to provide the casting adjacent the upper side of the propeller with an anti-cavitation plate, and which plate is preferably formed integral with the casting, and additionally braces the portion of the casting arching the upper side of the propeller.

A further object of my invention resides in providing the propeller-carrying-casing with an anti-cavitation plate arranged so as to directly overlie the path of travel of the propeller blades, and in forming the exterior surfaces of this casing relatively broad and smooth and extending them upwardly well above the plane of the anti-cavitation plate, whereby not only to permit the hous-

ing to travel through the water with minimum resistance and to provide rudder surfaces to assist in steering, but also to permit the flowing water to pass closely about the rear of the housing above the anti-cavitation plate to assist in preventing cavitation at the propeller. A further feature of this aspect of my invention resides in the fact that the propeller-carrying-casing as thus constructed, provides an enclosing housing for the drive and propeller shafts, the geared connections therebetween, and also for one or more water passages leading to the water jacket of the engine and terminating on the exterior face of the housing below normal water level, by which arrangement the propeller-carrying-casing can move through the water with minimum resistance and cooling water can be delivered to the water jacket of the motor.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:—

Figure 1 is a side elevation of an outboard motor showing the devices applied thereto.

Figure 2 is a detail view in elevation of the right side of the deflecting plate and portions of the adjacent mechanism.

Figure 3 is a bottom plan view of a portion of the anti-cavitation plate and the water-resisting plate.

Referring to the drawing the numeral 1 designates the motor, which motor is provided with a downwardly extending drive shaft casing 2, which drive shaft casing is rotatably mounted in a bearing member 3 and 4 in the usual manner, and the motor as a whole is pivotally connected at 5 to the bracket 6, and which bracket in turn is securely clamped to the rear end 7 of a boat 8. In motors of this general type, the motor as a whole is pivotally moved in the bearing members 3 and 4 during a steering operation, and at which time the operator grasps the tiller 9. It has been found that during a steering operation it is necessary for the

operator to maintain a firm grip on the tiller 9, and the hand and arm of the operator is under strain, particularly in long runs, and which strain is caused by the tendency of pivotal movement of the motor as a whole in the direction of throw of the propeller 10, and which throw not only has a tendency to cause the motor as a whole to have a pivotal movement, but also the rear end of the boat to have a lateral movement in the direction of throw of the propeller.

Propeller 10 is driven in the usual manner and in the present case the blades 11 thereof pass between the intake port 12 and the discharge port 13. During the rotation of the propeller, water is driven through the port 12 through the pipe 14 to the water jacket 15 of the engine, and is sucked as well as discharged through the port 13 by the propeller blades as they pass through the arched portion 16 of the casing 17. The arched portion of the casing 17 arches the upper side of the propeller and terminates rearwardly thereof in the portion 18. Extending rearwardly and outwardly from the portion 18 is a deflecting plate 19, and against which deflecting plate water forced rearwardly by the blades 11 of the propeller engages and counteracts the pivotal movement of the motor as a whole as well as the side throw, thereby relieving strain on the hand of the operator while grasping the tiller 9 during a steering operation. It will be noted that the deflecting plate 19 curves in the direction of the direction of rotation of the propeller, which causes the side throw and pivotal action, consequently the current of water which is projected rearwardly by the propeller blade will impart sufficient power on the curved plate 19 to counteract the pivotal tendency as well as the side throw. It will be noted that plate 19 curves to the right, however it is to be understood with a left hand propeller the plate may be reversed in its position.

Port 12 extends upwardly through the arched portion 16 of the casing 17 and formed integral with said arched portion 16 and casing 17, and located adjacent the upper side of the propeller is an anti-cavitation plate, which plate prevents cavitation and at the same time forms a brace for the arched portion 16 of the casing and eliminates the necessity of making the arch 16 relatively heavy, which in turn would cause a bulky structure and unnecessary resistance as the motor moves through the water.

The propeller carrying casing 17 which is rigidly mounted on the lower end of the tubular sleeve or casing 2 surrounding the drive shaft forms a housing for the lower end of said depending drive shaft, for the propeller shaft on which the propeller 10 is mounted, and for the geared connections therebetween. It also houses the water discharge

passage 12 and the water intake passage 13 which extend upwardly therethrough and connect with suitable passages within the enclosing casing 2 leading to the jacket of the motor. This propeller-carrying casing 17 is provided with relatively broad smooth and unbroken exterior surfaces both below and above anti-cavitation plate 20. This plate 20 preferably directly overlies the uppermost path of travel of the propeller blades 11, and it will be seen that the outer walls of this casing extend from the barrel-like portion 21 of the casing upwardly considerably above the anti-cavitation plate. In fact, the anti-cavitation plate is located substantially midway the top of the casing and the barrel-like portion of the casing in which the propeller shaft is directly mounted. By means of this construction, when the device is propelling the boat through the water, the water will flow with minimum resistance past these relatively smooth and substantially stream-line surfaces, thereby cutting down resistance to a minimum. By extending these smooth surfaces of the casing upwardly for a considerable distance above the anti-cavitation plate 20, the water flowing past the surfaces of the casing which are above the anti-cavitation plate will tend to follow the wall surfaces at the rearmost part of the casing and will flow inwardly and rearwardly above and over the anti-cavitation plate, thus creating a substantial body of flowing water directly over the cavitation plate and thus assisting the latter in preventing the formation of air pockets or cavitation at the propeller. In addition, by thus forming this propeller-carrying casing with these relatively smooth walls which extend a considerable distance upwardly and also rearwardly, I provide relatively broad surfaces giving a rudder effect to assist the propeller in its steering movements as for instance when the housing is angularly turned to steer the boat in different directions.

From the above it will be seen that means is provided in connection with an outboard motor whereby the pivotal action of the motor as well as the side throw incident to the rotation of the propeller is obviated, consequently strain on the helmsman is relieved. It will also be seen that the deflecting plate 19 may be formed integral with the casing 17, as well as the anti-cavitation plate, consequently can be made in a single casting, thereby reducing the cost of manufacturing to a minimum.

The invention having been set forth what is claimed as new and useful is:

1. The combination with a pivotally mounted outboard motor, a rotatable propeller carried by said motor, a casing, a member carried by said casing and arching the side of the propeller and having intake and discharge

by said member arching the propeller and located rearwardly of the propeller, said deflecting member extending outwardly in the direction of rotation of the propeller.

2. The combination with an outboard motor, a propeller carried by said motor, a casing, a member carried by said casing and arching the upper side of the propeller and having intake and discharge ports, and a deflecting plate carried by said arching member and disposed rearwardly of the propeller and extending in the direction of rotation of said propeller.

3. The combination with the lower end of an outboard motor, a propeller carried by said lower end, of a member arching said propeller and terminating rearwardly thereof, a deflecting plate carried by said member rearwardly of the propeller, said deflecting plate extending laterally in the direction of turn of the propeller in constant relation to said propeller.

4. The combination with a pivotally mounted outboard motor having a propeller, of a water deflecting plate disposed adjacent said propeller and forming means whereby pivotal movement of the propeller is obviated in the direction of turn of the propeller.

5. The combination with an outboard motor pivotally mounted and having a propeller, of means disposed rearwardly of the propeller and forming water resisting means whereby pivotal action of the motor in the direction of turn of the propeller is prevented as the motor moves through the water.

6. The combination with an outboard motor having a propeller shaft casing, a propeller, a member arching one side of the propeller, of an anti-cavitation plate carried by the casing and the member arching the propeller and located above the propeller.

7. The combination with an outboard motor having a propeller shaft casing, a propeller, a member arching one side of the propeller, a water resisting member carried by said arching member and extending in the direction of rotation of the propeller, of an anti-cavitation plate carried by the casing and the arching member.

8. The combination with an outboard motor casing, a propeller, a member carried by the casing and arching the propeller and having intake and discharge ports, a water resisting member carried by the arching member and an anti-cavitation plate carried by the casing at opposite sides thereof and by the member arching the propeller.

9. A propulsion device for water vehicles comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor having its drive shaft disposed within the drive shaft casing and said shaft passing downwardly

through said casing, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion, and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly from said barrel-like portion and provided considerably below its top with an anti-cavitation plate extending rearwardly therefrom and overlying the path of forward travel of the propeller blades, and said housing having substantially vertical internal inlet and outlet passages leading to and from the water jacket of the engine both passages opening below normal water level.

10. A propulsion device for water craft comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed within the drive shaft casing, said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion adapted to house the propeller shaft and its driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly from said barrel-like portion and provided with an anti-cavitation plate extending rearwardly therefrom and overlying the forward path of travel of the propeller blades, said housing having smooth and unbroken outer wall surfaces at each side thereof extending upwardly from the said barrel-like portion to said plate and upwardly well above said plate to the top of the housing, and said housing having substantially vertical internal inlet and outlet passages leading to and from the water jacket of the engine both passages opening below normal water level.

11. A propulsion device for water craft comprising a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed within the drive shaft casing and said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turning therewith, said housing including a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing extending upwardly

1,716,992

from said barrel-like portion and provided well below its top with an anti-cavitation plate extending rearwardly therefrom overlying the path of forward travel of the propeller blades and said housing having a substantially vertical internal passage leading to the water jacket of the engine, said passage opening at a point below normal water level.

12. A propulsion device for water craft having a stationary support carrying a bearing, a drive shaft casing mounted to turn in said bearing, a motor mounted on the upper end of said drive shaft casing with its drive shaft disposed within the drive shaft casing and said shaft passing downwardly therethrough, a housing mounted on the lower portion of the drive shaft casing and turnable therewith for steering, said housing being formed with a substantially horizontal barrel-like portion, a propeller shaft mounted within said barrel-like portion and having a driving connection with the motor drive shaft, a propeller on said propeller shaft, said housing having an anti-cavitation plate extending rearwardly therefrom overlying the path of forward travel of the propeller blades, said housing having unbroken outer wall surfaces at each side extending up-

wardly from the said barrel-like portion to said plate and from said plate upwardly a substantial distance to the top of the housing, and said housing having a substantially vertical internal passage leading to the water jacket of the engine, said passage opening below the normal water level.

13. The combination of a water propulsion device having a vertically extending turnable propeller shaft casing provided with an internal water passage, opening below normal water level, a propeller mounted thereon, means for turning said casing for steering, said casing having an anti-cavitation plate cast integral therewith and located in a plane above the propeller.

14. The combination of a water propulsion device having a vertically extending turnable propeller shaft casing provided with an internal water passage, opening below normal water level, a propeller mounted thereon, means for turning said casing for steering, said casing having smooth and unbroken walls extending upwardly and provided with an integrally cast anti-cavitation plate substantially midway of its height and in a plane above the propeller blades.

In testimony whereof I affix my signature.
HARRY L. JOHNSON.

Form 700

District Court of the United States

Entered DISTRICT OF MICHIGAN

HONORABLE COMMISSIONER OF PATENTS,
Washington, D. C.

Sir:

In compliance with the Act of February 18, 1922 (42 Stat. L. 392), you are advised that there was filed on the twentieth day of August, 1929, in this court an action, suit, or proceeding No. 5573, entitled:

Name John. W. Johnson - Johnson Corp., et al. and Johnson Motor Company, Plaintiff,
Address Jackson, Illinois

versus

Name Outboard Motor Corporation, Defendant,
Address Jackson, Michigan,

brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1,567,512	Dec. 19, 1925	Johnson Brothers Engineering Corporation,
1,714,962	June 11, 1929	Johnson Motor Company, Limited

In the above-entitled case, on the _____ day of _____, 1929, the following patents have been included by _____ (insert amendment, answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE

In the above-entitled case the following decision has been rendered or deemed issued:

IN WITNESS WHEREOF I have affixed my hand this twenty-first day of August, 1929, at Detroit, Michigan

Elmer E. Washburn

Carrie Davison

By Carrie Davison, Deputy.

District Court of the United States

EASTERN DISTRICT OF MICHIGAN, SOUTHERN DIVISION

HONORABLE COMMISSIONER OF PATENTS,
Washington, D. C.

Sir:

In compliance with the Act of February 18, 1923 (42 Stat. L. 392), you are advised that there was filed on the 17th day of January, 1923 in this court an action, suit, or proceeding No. 5928, entitled:

Name Johnson Brothers Engineering Corporation, Indiana Corporation, and Plaintiff,
Johnson Motor Company, Delaware corporation,
Address Evankton, Illinois.

VERSUS

Name Cailla Brothers Company, doing business as Cailla Motor Co., Defendant,
Michigan corporation,
Address Detroit, Michigan.

Brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1716962	June 11, 1929	Johnson Brothers Engineering Corp. Johnson Motor Company licensee.

In the above-entitled case, on the _____ day of _____, 1923, the following patents have been included by _____ (insert amendment, answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE
1		
2		
3		
4		
5		

In the above-entitled case the following decision has been rendered or decree issued:

IN WITNESS WHEREOF I have affixed my hand this 17th day of January, 1923 at Detroit, Michigan.

ELMER W. WOODHULL

Clerk of said Court.

By Larrie Davison Deputy.

131-64

District Court of the United States

Eastern District of Michigan

UNITED STATES COMMISSIONER OF PATENTS,
Washington, D. C.

In compliance with the Act of February 18, 1922 (42 Stat. L. 392), you are advised that there was filed on the third day of July, 1933, in this court an action, suit, or proceeding No. 6027, entitled:

Name Johnson Prothers Engineering Corporation, and Plaintiff,
Johnson Motor Company,
Address Waukegan, Illinois

VERSUS

Name Caille Motor Company Defendant,
Address Detroit, Michigan.

brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1,608,484	Nov. 9, 1926	JOHNSON ENG. ENGINEERING CORP.
1,716,962	June 11, 1929	"
1,763,970	June 17, 1930	"
1,824,735	Sept. 22, 1931	"
1,824,740	Sept. 22, 1931	"
18,120 Re	July 7, 1931	"
18,115 Re	July 7, 1931	"

In the above-entitled case, on the _____ day of _____, 1933, the following patents have been included by _____ your amendment, answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE

In the above-entitled case the following decision has been rendered or deemed based:

IN WITNESS WHEREOF I have affixed my hand this 13th day of July, 1933, at Detroit, Michigan

Clarence H. Worke's
Clerk of said Court.

131-65
69



District Court of United States

SOUTHERN District of INDIANA - INDIANAPOLIS DIVISION

HONORABLE COMMISSIONER OF PATENTS,
Washington, D. C.

Sir:

In compliance with the Act of February 18, 1922 (42 Stat. L. 392), you are advised that there was filed on the 5th day of September, 1933, in this court an ~~answer~~ suit, ~~captioned~~ No. 1502 Equity, entitled:

Name JOHNSON BROTHERS ENGINEERING CORPORATION and JOHNSON MOTOR COMPANY, Plaintiffs
Address Waukegan, Illinois

versus

Name MUNCIE GEAR COMPANY and A. E. NEEDHAM, Receiver of, Defendants
Muncie Gear Company
Address Muncie, Indiana

brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1. 1,716,962	June 11, 1929	Harry L. Johnson
2. 1,763,970	June 17, 1930	Louis James Johnson
3. 1,824,740	Sept. 22, 1931	Louis J. Johnson & Harry L. Johnson
4. 15,120 (Reissue)	July 7, 1931	Louis J. Johnson
5. 15,118 (Reissue)	July 7, 1931	James H. Pierce

In the above-entitled case, on the _____ day of _____, 192____, the following patents have been included by _____ (insert amendment, answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE
1		
2		
3		
4		
5		

In the above-entitled case the following decision has been rendered or decree issued:

In witness whereof I have affixed my hand this 9th day of September, 1933, at Indianapolis, Indiana

Robert F. [Signature]
Clerk of said Court.

131- 66 70

JAN 29 1935

District Court of the United States

SOUTHERN District of INDIANA INDIANAPOLIS DIVISION

HONORABLE COMMISSIONER OF PATENTS,
Washington, D. C.

In compliance with the Act of February 18, 1922 (42 Stat. L. 392), you are advised
that there was filed on the 5th day of September, 1933, in this court an
equity suit, captioned No. 1502 Equity, entitled:

Name JOHNSON BROTHERS ENGINEERING CORPORATION and Plaintiffs
JOHNSON MOTOR COMPANY
Address Waukegan, Illinois

versus

Name MUNCIE GEAR COMPANY and A. E. KEEHAM, Receiver of Defendants
Muncie Gear Company
Address Muncie, Indiana

Brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1,716,962	June 11, 1929	Harry L. Johnson
1,763,970	June 17, 1930	Louis James Johnson
1,824,740	Sept. 22, 1931	Louis J. Johnson & Harry L. Johnson
1,120 (Reissue)	July 7, 1931	Louis J. Johnson
1,116 (Reissue)	July 7, 1931	James H. Pierce

In the above-entitled case, on the _____ day of _____, 192 _____,
the following patents have been included by _____ (insert amendment,
answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE

In the above-entitled case the following decision has been rendered or decree issued:
December 5, 1934 - Dismissed on plaintiff's motion at plaintiffs costs.

In witness whereof I have affixed my hand this 25th day of
January, 1935 at Indianapolis, Indiana

Albert C. Sogencier
Clerk of said Court.

131-67 71

District Court of the United States

DISTRICT OF Northern Illinois

HONORABLE COMMISSIONER OF PATENTS,
Washington, D. C.

Re:

In compliance with the Act of February 18, 1923 (42 Stat. L. 302), you are advised that there was filed on the 19th day of January, 1929, in this court an action, suit, or proceeding No. 274, entitled:

Name Johnson Brothers Engineering Corporation, and Plaintiff
Outboard, Marine & Manufacturing Company
Address South Road, Ind., and Wilmington, Dela. respectively

Name Muncie Gear Works, Inc. and Bruns & Collins, Inc. Defendant
Address Muncie, Ind., Chicago, Ill.

brought upon the following patents:

PATENT NO.	DATE OF PATENT	PATENTEE
1. <u>1,716,962</u>	<u>June 11, 1929</u>	<u>Johnson</u>
2. <u>1,763,970</u>	<u>June 17, 1930</u>	<u>Johnson</u>
3. <u>2,067,533</u>	<u>Jan. 12, 1937</u>	<u>Johnson</u>
4. _____	_____	_____
5. _____	_____	_____

In the above-entitled case, on the _____ day of _____, 1929, the following patents have been included by _____ (insert amended answer, cross bill, or other pleading):

PATENT NO.	DATE OF PATENT	PATENTEE
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

In the above-entitled case the following decision has been rendered or decree issued:

IN WITNESS WHEREOF I have affixed my hand this 16th day of February, 1929, at Chicago, Ill.

May T. [Signature]
Clerk of said Court

1926

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